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PART I.

ORIGINAL COMMUNICATIONS.

ART. XIV.—*Reports in Operative Surgery.* By RICHARD G. H. BUTCHER, Esq., M.R.I.A., F.R.C.S.I., Examiner in Surgery in the Royal College of Surgeons in Ireland; Surgeon to Mercer's Hospital; and Lecturer on Clinical Surgery, &c., &c.

1. EXCISION OF NEARLY THE ENTIRE OF THE LEFT SUPERIOR MAXILLARY BONE BY SINGLE INCISION INTO THE NOSTRIL; PERFECT RECOVERY, WITH SCARCELY A TRACE OF DEFORMITY.

2. EXCISION OF NEARLY THE ENTIRE OF THE RIGHT SUPERIOR MAXILLARY BONE BY SINGLE INCISION INTO THE NOSTRIL; PERFECT RECOVERY, AND NO DEFORMITY.

3. EXCISION OF A LARGE PORTION OF THE UPPER JAW, WITHOUT DIVISION OF THE CHEEK OR LIP; PERFECT RECOVERY; NO DEFORMITY.

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7. SINGLE HARE-LIP, COMPLICATED; SUCCESSFULLY OPERATED ON, AND WITH LITTLE TRACE OF DEFORMITY.

8. DOUBLE HARE-LIP, COMPLICATED; SUCCESSFULLY OPERATED ON; SCARCELY ANY DEFORMITY.

9. DOUBLE HARE-LIP, COMPLICATED; SUCCESSFULLY OPERATED ON, AND CURED, WITH LITTLE DEFORMITY.

10. DOUBLE HARE-LIP, COMPLICATED; OPERATED ON SUCCESSFULLY, AND WITH BUT LITTLE TRACE OF DEFORMITY.

11. SINGLE HARE-LIP, COMPLICATED; SUCCESSFULLY OPERATED ON, AND CURED, WITH LITTLE DEFORMITY.

Operations about the mouth and face justly demand the most attentive consideration from the practical surgeon. In this region deformities of the most hideous kind are daily presented to view: by arrested development parts are grotesquely distorted, so as to cause the marked one to be thrust aside into dark corners; the functions of organs are either interrupted or altogether lost—sufficient calamities to embitter life for ever. In this locality, too, disease fastens itself upon the sufferer, often as the messenger of death; but by the skilful appliance of the knife, by bold and dexterous operations, deformities are removed, deficient parts supplied, diseased structures cut out, life saved.

Deeply impressed with the magnitude of the subject, and willingly lending my feeble efforts for the benefit of those afflicted, I have no apology to offer for recurring to subjects upon which I have before largely written, save that a more extensive experience has elicited some facts, I trust, worthy of communication and remembrance. In the Number of this Journal for August, 1853, will be found a paper of mine on "Extirpation of the Upper Jaw." In this paper I have given a short sketch of the history of the operation—the causes which might demand such an interference. I dwelt upon the various methods of dividing the soft and hard parts, and finally illustrated the subject by a remarkable example, when I cut out the entire of the upper jaw, together with the whole of the palate bone, on account of a large fibro-vascular tumour springing from the

antrum, and threatening life by suffocation. This operation was marked by the most signal success, the patient being completely cured in about a fortnight, and remaining perfectly well, and enjoying the most excellent health up to the present time. In this case I had to doubly incise the cheek, from the angle of the mouth to the malar bone, and through the centre of the upper lip around the nose and up towards the inner angle of the eye, so as to allow a flap sufficiently large to be turned up and afford room for the taking away of the extensively implicated osseous parts and largely developed morbid product. The representation of the parts taken away, in their full size, and a faithful representation of the man after the operation, are well represented in the paper referred to. But I wish now to direct more particular attention to Mr. Fergusson's new operation,—I mean, of course, Mr. William Fergusson, the distinguished Professor of King's College, London. As the following cases which I operated on strictly illustrate the steps of the operation, I shall detail them, and then offer such comments as may be required for its selection, its grand and prominent recommendation being to lessen mutilation.

Case I.—*Excision of nearly the entire of the left Superior Maxillary Bone, on account of a large fibro-vascular tumour, by single incision into the nostril, and dissecting up the ala from the maxillary bone with the cheek flap. Perfect recovery, with scarcely a trace of deformity.*

M. R., aged 9 years, admitted to Mercer's Hospital on the 27th January, 1859. *History.*—Four years and a half ago a small tumour appeared upon the gum, above the site of the bicuspid tooth, on the left side; it gradually increased, and with its growth loosened the tooth. Shortly after, a fleshy mass appeared, forcing the tooth from its socket, and ultimately causing it to be shed. Caustics at this time were applied, but with no beneficial tendency, and the tumour increased, and caused likewise the teeth on either side of the part primarily affected to be cast, also expanding the alveolar arch, both internally and externally, to a considerable extent, but far more conspicuously in the latter direction. Hemorrhage frequently occurred from it, and that in considerable quantity; so the case progressed until the above date, when the boy was placed under my charge.

The following was the condition of the patient before he was submitted by me to operation. The left cheek presented a gradual prominence from beneath the orbit to the mouth, and

beyond the commissure of the lips. Externally it was not so marked, the swelling being rather suddenly cut off here; the left ala of the nose was somewhat expanded and elevated, while the lip, as far as the mesial line, was strained, and also raised; the eye was not affected, or displaced from its natural position or axis; and the mouth could not be entirely closed. On raising the lip, a large tumour revealed itself, osseous above, fleshy below; the outline of the anterior wall of the antrum had lost its form; instead of being concave, its navicular fossa was obliterated; the bone here was bulged forward and rendered convex, and evidently prominent, by some growth from the interior; it was hard, firm, and unyielding, and as yet not thinned by the influence acting upon it. By contrast with its fellow, it projected fully an inch, while, along the range of the alveoli, there was, as it were, a second expansion of the osseous tissue, all the teeth being shed from the left incisor to the second last molar, and replaced by an irregular fleshy mass in the sulcus; between these eminences the gum was thickened, hypertrophied, and seemed as a tense band constricting the lower growth. The inferior surface of the tumour was flattened where it came in contact with the teeth of the lower jaw, preventing the mouth from being entirely closed, and it increased transversely an inch and a half, so as to encroach considerably on the mouth. The palate plate of the maxillary bone was greatly depressed from before, to its termination behind and junction with the palate bone; it did not extend to the right side, for the disease was arrested in the mesial line, and its limits marked in a very decided way. On examining the nose, the diseased structure was likewise taking this direction; for the internal wall of the antrum was forced into the left nasal fossa, and so nearly as to occlude it at one point; the incisor tooth was loose in its socket, while the last molar was rigidly tight, and the bone natural and sound in front and above it. The prominent cheek was not discoloured externally; neither was it thinned; and, upon lifting the lip, the structure of the tumour presented a very marked coloration: several mammillated portions were of a dark purplish colour, with minute ramiform vascularity in the brightest shade of crimson, revealed thus by investigation with a powerful lens, while other parts presented dark red patches with excess of vessels traversing its meshes and conveying blood of deep modena colour. Several of these elevated parts were elastic, springy, particularly on the lateral aspects of the lower part of the growth, while, close to the osseous conjunction, many were dense, fibrous, revealing but little hypersthenia, and submit-

ting to pressure without pain, or resenting it by after-uneasiness. There was no evidence that the morbid growth had taken either an outward course or an upward direction in any very marked way, for the maxilla was not protruded beyond one line; neither were the soft parts œdematous, strained, or prominent to any very disfiguring extent, while the floor of the orbit was neither elevated nor encroached upon, neither was the eye implicated, nor the axis of the organ rendered in any way divergent from its fellow.

After a very careful investigation of the case, according to the premises laid down, I came to the conclusion that operative interference was not only justifiable, but most commendable and right; the disease, whether malignant or otherwise, being so isolated, so absolutely free from implication with parts around, that the most cautious and, as some will have it, the most conscientious surgeon could not deny the sufferer the chances held out by a bold and dexterous operation.

The pain and suffering induced by mastication, the frequent losses of blood during this act, the rapid encroachment of the morbid growth upon parts whose integrity and well-being were essential to the life of the individual,—all conspired to enforce the propriety of a measure that could only be put aside or abandoned through ignorance, fear, or incompetency. Having considerately weighed every particular, on the morning of the 28th I cut out the entire part after the following manner:—

The boy, being secured by a wide swathe passed round the arms, was placed sitting upon a high chair, his head resting against the breast of an assistant, and steadied there; standing in front of the patient, the upper lip was elevated and made tense by my left hand; seizing it on the right side, while an assistant performed a similar office on the left, it was divided by a stroke of a bistoury in the mesial line as far as the septum, and the knife then curved into the left nostril; the left side of the nose, with its cartilage, was next freely dissected up from the maxilla as high as the attachment to the nasal bone, the left cheek was in a similar way freed from the maxilla by wide and bold sweeps of the knife, caution being taken to keep its edge close to the bone. The free liberation effected in this way permitted the entire cheek and half the nose to be turned upwards and outwards, so as to reveal most extensively the hard parts beneath. By such management and liberation of the flap, even as high as the orbital ridge of the maxilla, the object was fully accomplished. I next, with a powerful pair of forceps, suddenly curved on the flat at the ex-

tremity of its blades, divided the palate plate of the maxillary bone, one blade as closely as possible applied to the septum and resting in the left nostril, while the other occupied the mouth and in a parallel axis; thus the section was made as near to the mesial line as consistent with the safety of the central partition; it lay exactly between the incisor teeth, and, as was expected from the conformation of the instrument, the curve was efficient in dividing the palate plate of the maxilla from that of the palate bone. This being effected, the instrument was next applied to the maxilla beyond the limits of the tumour. It was here grasped by the blades of the forceps a little in front of the last molar tooth, and cut from below upwards, with a slight inclination forwards; then the connexion between it and the malar bone was clipped across, after which the entire body of the bone was cut down from the orbital plate, and the entire maxilla taken away, save and except a small portion of its posterior and outer prominence holding the last molar tooth. In the several manœuvres necessary to liberate the bone, nothing could act more efficiently than the curved forceps I am in the habit of using; its sharp, pointed, well-fitting blades adapting themselves to each locality and point requiring division. After the manner described, the bone was fairly cut out from its position, not broken down. On all being taken away, the cut surfaces presented in every respect a most healthy aspect; they were fairly revealed to sight when the cheek and nose were carefully elevated, while to the touch every part was hard, resisting, and firm. The hemorrhage was very considerable while the soft parts were being detached, yet but little blood flowed upon section of the bone,—nothing that a sponge thrust into the gap did not quickly suppress by two or three repetitions of the act. Inspection of the parts pronounced them healthy to demonstration. A large piece of dried sponge was placed in the chasm, and secured by a ligature brought out at the left angle of the mouth. All hemorrhage having been restrained, two points of the twisted suture were employed to approximate and maintain together the sides of the divided upper lip. The first needle was inserted at the junction of the white and red edge of the lip, at least three quarters of an inch away from the wound, made to enter about this point on the left side, and to traverse deeply the textures of the part, even close to the mucous membrane, until it appeared at a point on the right side opposite to that of entrance: a few turns of a thick silk cord were thrown around it, the cheeks being carefully and evenly pressed forward; the cord, thus passed in a figure of 8 form, prevented their retraction.

The second needle was passed likewise from the left side, and, being entered outside the ala of the nose, on a line with its lower edge, and carried to the opposite side, piercing at a point corresponding to that just described; the needle took the same depth as the first, and as efficiently maintained the parts in situ. These measures being completed, the boy was conveyed to bed, and placed with the head somewhat elevated; wine was administered, and an opiate given. It is scarcely necessary to say, that the bed was prepared for the patient, being thoroughly heated with warm jars, others being held in readiness to be placed to the feet and limbs. The little creature bore the operation well, and quickly settled to sleep. However, a good deal of uneasiness and debility followed: wine liberally given quieted the nervous derangement, and then sleep of a more settled, undisturbed, and refreshing character followed.

Jan. 29th. Had some sleep; pulse rapid; face a good deal swollen; partook plentifully of warm milk; some beef tea.

30th. Condition much as on yesterday. On the next day, the 31st, I removed the piece of sponge, owing to its being the nidus for most obnoxious fœtor, and a stimulus to profuse salivation. Immediately upon doing so, though executed with the greatest gentleness by means of the string brought out of the mouth for that purpose, arterial blood flowed, drop by drop at first, but soon quicker and rapidly; thus continuing beyond a few minutes, I proceeded to try and check it, an act accomplished after some time, and with difficulty. The means were as follows:—The coldest iced water was thrown in a continuous stream with a syringe into the wounded part of the mouth, at the same time that a free current of air was let play upon the face. This failing, long strips of lint steeped in a strong solution of tannic acid in water, were pressed up into the space, but with no favourable result, as, after a few minutes, the blood trickled down again. Then the lint was removed, and the tincture of matico injected upon the bleeding part, and this in its turn failing, long shreds of lint soaked in it were carefully applied and pressed upon the entire surface. This again failing, lint steeped in turpentine was had recourse to, with, however, only a temporary suspension, for again the blood flowed, rather more quickly. I next turned out everything, clots and all, and repeated the injection of matico; many glass syringes-full being thrown in; and whether to ascribe the arrest of the bleeding to this management, or to the free exposure of the part, it was difficult to determine. I consider, however, it was owing to these combined causes, and

more especially the emptying of the engorged vessels after reaction. However, be this as it may, the bleeding ceased, and there was no return of it. Towards evening, the child vomited several large clots of blood, but there was no weeping from the mouth, and as a surety to preserve him thus, all his drinks were given iced, and a full opiate at bed-time. On the following morning, the report states there was no return of the bleeding; it was very salutary so far, reducing in a very marked way the swelling of the eyes, cheek, and parts around. Milk and eggs beaten up were given, nearly cold. Thus the boy went on gradually improving; no return of the hemorrhage; considerable diminution of the salivation; until February 5th, when I removed the needles; they were not producing any mischief, no tension or ulceration around them. I thus suffered them to remain until the eighth day, when union was perfectly effected throughout the entire extent of the incision, and the needle apertures presented the healthiest state. In this case I had to depend altogether upon the efficient services of the needles for the retention of the flap in proper position, as any application of adhesive straps would tend to make undue pressure upon, and depress the unsupported cheek. The twisted suture, applied after my method, and which I have so carefully dwelt upon in my treatise on hare-lip, did not fail me here; it fully realized my most sanguine expectations. The boy, on this day, a week after the operation, looks cheerful, bright, and happy; he can speak pretty well, and he can feed himself liberally with bread and milk, beef-tea, &c., without much inconvenience in the act of swallowing.

On the 19th of February, three weeks after the operation, there was so little deformity externally that a friend of mine, a medical gentleman, when looking at him, asked from which side the jaw was taken; there was but little flattening or sinking of the cheek, at least in so trifling a degree as not to be discerned by the uneducated eye, and the mouth remained so natural that but little result of suffering was portrayed. The only external mark of the operation is the single red line beneath the septum to the centre of the depression in the upper lip, and this after a little time may be expected to be nearly obliterated, owing to the close, even perfection of union brought about and accomplished. The eye is not disturbed from its right position and axis; it has not fallen down, neither is the lower lid relaxed; the nose, too, is as evenly marked in its outline by depressions and elevations as on the sound side; and, on the whole, standing a short distance from the patient, it would be difficult to detect any want of symmetrical arrange-

Fig. 1.

Fig. 2.

Mr. Butcher's cases of excision of the upper jaw.

ment in the face. On elevating the lip, then, indeed, is disclosed, revealed, the work that has been done: all beneath the eye, all behind the cheek is one large cavity; the palate bone and soft palate forming an imperfect boundary, behind while the vomer and turbinated bones irregularly define and limit it mesially; the last molar tooth and exterior part of the great tuberosity constitute a defined buttress on the outside. All within this space, the parts subjected to division, osseous, cartilaginous, or soft, are equally far advanced in the process of repair; the sharp edges of diseased bones are rounded off and covered with lymph; granulations have sprung from beneath the eye; they fill the site of the orbital osseous plate, and they are dense, firm, elastic and springy to the touch; no doubt, time will condense them more, and render the product admirably compensative for the part removed. With regard to speech and deglutition, the former is not so much interfered with but that all expressions can be interpreted and understood, and this, no doubt, will, by practice and habit, be rendered sufficiently perfect; while the latter, deglutition, is now so improved that solids and fluids are with equal facility swallowed and disposed of; and, further, the healthy appearance of the little fellow would afford presumptive, nay, decisive evidence, that the nutritious properties of the food are fairly seized upon and applied to the demands of the system. The boy, from being enfeebled, pale, and flabby from irritation, pain, and hemorrhages, is now becoming strong, fresh-coloured, firm, and active; instead of being prostrated and timid, he is lusty, vigilant, and strong[a]. On the whole, the operation is one with which I have every reason to be much satisfied. The patient's recovery has been very rapid. He was sent home, dismissed cured, three weeks after the operation. Too much praise cannot be awarded to Mr. Fergusson for this beautiful plan of operation, and my experience of it is, that nearly the whole maxilla can be taken away if the surgeon is dexterous in his manipulations. If such is to be done, no doubt the parts have to be well held up, and the cheek restrained by what I greatly prefer to the fingers of assistants, firm curved metallic retractions. To do all that is necessary, if the tumour is large, requires expedition and boldness, while the patient is firmly fixed, with the head well back, and a strong light secured on the part. Great advantages thus flow from this beautiful application of preserva-

[a] Pate I., Fig. 1, gives a beautiful and faithful picture of the boy at this time after the operation, taken by Connolly, and nothing can be more pleasing to look upon.

tive surgery—the total avoidance, I may say, of deformity—the saving of the portio dura nerve from division, thereby preventing flattening of the cheek from defective or interrupted nervous supply—the prevention of loss of blood by not meddling with or implicating the large vessels of the cheek. In this instance I preserved the last molar tooth with the external part of the great tuberosity; it was not diseased or implicated in any way that I could discover, so that I saved it, with the intention that hereafter it might form a fixed point for the attachment of a gold plate with artificial teeth, if such should be desired. There was no objection to leaving it, for if disease manifested itself in the part, a very trifling interference, a couple of decisive strokes with the curved forceps, would readily take it away, and the advantages proposed were more than commensurate with a risk so quickly rectified. The practitioner, however, should not be led astray into the belief of a return of the disease, because the remaining piece of gum becomes swollen and thickened; this state usually occurs after division, but the indurated part *again* subsides, and regains its natural level.

Case II.—*Excision of nearly the entire of the right Superior Maxillary Bone, owing to destructive caries implicating seriously neighbouring organs, by single incision into the nostril, and dissecting up the ala from the maxillary bone with the cheek-flap. Perfect recovery, and no deformity.*

Andrew Martin, aged 16, admitted to Mercer's Hospital in October 1859. This young boy suffered for several months from destructive caries, seizing on the right superior maxillary bone. It came on in an unaccountable way, after bad fever—suddenly the cheek began to swell, with deep tensive pain in the upper jaw; gradually and steadily it continued; the constitutional symptoms ran so high that all appetite quickly disappeared. He had severe sweats, great irritation, sometimes delirium, and occasional faintings. Soon a small sinuous abscess formed inside the cheek, without much amelioration of local or constitutional distress—the former symptoms, or those under the category of local, were of the most intensely painful nature, acting, no doubt, as surmised, the adjuvant of the feverish manifestation. As the result of this quick, rapidly created inflammatory action, skipping the bounds of resolution, or even of salutary subsidence in suppuration, it went on, progressed to destructive ulceration or caries of the bone. So wide-spread was this mischief, and so seriously threatened were the neighbouring important organs of sense by this rapid encroachment, that

the boy was submitted to my care on the above date. Now, in addition to the foregoing report, I may add at this time, the case was assuming a very serious nature, so far as concerned the organs of vision on the affected side, and the implication by continuity of parts on the opposite. The entire body of the maxillary bone was in a state of hopeless caries, even up to the edge of the orbit; the nasal spine, the palate plate, and the tuberosity throughout its greatest extent were sadly involved; the incisor teeth, the bicuspid and two front molars were loosened in their sockets, the palate bone was depressed, its soft parts thickened, deeply corrugated, extremely sensitive to the touch, interfering with mastication and the first act of deglutition; the discharge from the diseased bone was continuously draining back, even in sleep, rendering an annoyance most distressing, creating at intervals startling anxiety and struggles for breath; again, from the implication of the nasal process, the lachrymal sac and ducts were involved in the products of transmitted inflammatory action, thickening, induration, obstruction—so that the superimposed parts were swollen up, their colour reddened, the secretions more rapidly produced than natural, streaming over the cheek; some excoriation occasioned by their constant flow and increased acrimony. On lifting up the cheek the bone was extensively deprived of its attachment to the soft parts, but externally, towards the tuberosity, it was thickened, and had matted into it the cheek. The most conspicuous and central portion of the cheek was thinned, particularly above, below the margin of the orbit, and threatened with perforation by ulcerative absorption, unless relieved from the disintegrating process communicated from behind. This threatening of slough, of permanent deformity, formed no small item in conjunction with the distressing, undermining symptoms recorded, as to the propriety of operative interference: so greatly did the boy suffer on every attempt at taking food, that he absolutely, day after day, solicited my "doing something for him." It was clear that nothing could be expected from the efforts of nature here; she could not save the sensitive parts already interfered with, deeply threatened by progressive disease; even did time allow the casting off, the enucleating of the doomed part, organs essential to comfort and to happiness were so deeply risked, that the most cautious surgeon might tremble in his timidity as to the risk incurred; but the sufferings of the boy, his oft repeated distresses from profuse, trickling, fœtid discharges, irritating the glottis, keeping it active in its watchfulness, even unto the prevention of sleep, called for active interference, the

bold removal of the entire of the diseased part, and this I proceeded to accomplish, and operated after the following manner.

November 25th. The boy was rolled in a large sheet; his arms being thus secured, he was placed sitting in a solid, firm, high chair used for operating purposes; when so placed, the wooden bar was slipped down in front, so as to guard against any starting or slipping forward, a precaution, I would say, most imperative—as before now I have seen the patient, when not so controlled, almost break from the grasp of his retainers and assume the erect posture, protracting thereby the operation in a most painful way, causing great alarm to the bystanders, unsteadiness to the operator, and endangering by the rash efforts his own safety. The patient being then steadily secured, with his head resting against the breast of an assistant, the upper lip was cut through on a line with the septum nasi, and the knife turned into the right nostril; quick as thought, the right half was freed from the maxilla, and so, likewise, the attachment of the right ala of the nose, and very extensively the cheek; this liberation of the parts allowing a very free elevation of it, and permitting the knife to sweep with decision and effectiveness, even to the exposure of the whole anterior aspect of the bone. Such being accomplished, one blade of a powerful bone forceps was passed into the right nostril, and the other into the mouth, and a free division made of one maxillary bone from the other at their junction in the mesial line; this extended throughout the palate plate from before backwards, but stopped at the junction of the palate bones of the opposite sides. There was no indication of disease being transmitted beyond the sutural boundary, either mesially or transversely; the forceps, a curved one, being substituted, was next placed upon the alveolar range far back, two molar teeth having been first extracted; the second molar was drawn, it coming away quickly, evidently from diseased bone; then the third was taken, which offered greater and natural resistance; so below this, close to the back molar, the forceps was laid on, its curve being directed towards the mesial line, convexity backwards; the alveolar arch was cut through here, and the forceps being pushed up a little higher, and in the same vertical direction, the section of the body was completed up to the orbital plate. This section, from the difficulties in effecting it, was, no doubt, made in healthy tissue; the body of the bone was clipped across, and then a little leverage downwards detached the entire carious bone—a careful examination of the lines of section proved this statement—bleeding was rapid and copious, so much so, that I used the hot

iron freely, and thus suppressed the flow. The lip was afterwards brought together with the twisted suture, great caution being observed in the accurate adjustment of the parts—the insertion of the needles—the application of the thread. When the entire was done, long shreds of lint were passed gently, yet steadily, up into the chasm left after the removal of the bone, in order to afford an equable support, not only to the cut parts within, but also to the pendulous cheek. The entire being satisfactorily accomplished in this way, the boy was conveyed to bed. Shortly after, he got some wine and opiates to steady the heart's action and to secure sleep. 9 o'clock P.M. Very quiet since the operation; has partaken freely of warm milk.

26th. Had an excellent night; quiet sleep; drinks with satisfaction and in quantity.

29th. Has partaken freely of milk, beef-tea, and crumbled bread in it, since the operation, and on this day, 96 hours after the operation, I removed the needles. The silk cord being adherent to the wound, it was suffered to remain, and supported in its place by wide and long straps of adhesive plaster, gently pressing the cheeks forward.

30th. Removed the straps, and with them the adhesive threads came away. Nothing could be more beautiful than the delicacy of the line of union; it was absolutely difficult to trace it out; the lip, in fact, was as perfect in its form as before the operation. Nothing can be more satisfactory than the progressive improvement within the mouth; healthy pus is discharged from the recently wounded surfaces, and nothing can be more promising as to a rapid and favourable result.

December 12th. All trace of the external incision is now all but obliterated; a white thread-like line marks its course; the internal parts are all healed; the power of deglutition and mastication is entirely restored; and the articulation and speech are every day improving. On inspection of the young lad, it is difficult to make out that he has been subjected to any severe operation, and, on inspection of the parts within, it is almost impossible to conceive the large amount which has been taken away: as compatible with external appearances—a total absence of deformity. Plate I., Fig. 2, is an admirable likeness of the boy, taken on this date by Connolly, and ably lithographed by Forster.

Case III.—*Excision of a large portion of the Upper Jaw, implicated with a fibro-vascular tumour, without division of the cheek or lip. Perfect recovery; no deformity.*

Where the tumour does not attain a considerable magnitude, it is astonishing what may be done in excising large portions of the upper jaw, without dividing the cheek or lip. It is a practice that always should be adhered to, for the reasons given in the opening of this paper. As an illustration, I shall cite the following case:—

W. R., aged 10 years, was admitted into Mercer's Hospital May 6, 1859, with a tumour the size of a small walnut, springing from the left superior maxilla, and implicating its alveolar range from the incisor tooth to the first molar. The bicuspid was thrust from its bed by the new growth, and it was evident its nidus was seated deep in the alveolar range. The growth was of a deep purple colour, and extended inwards on the commencement of the palate beyond the alveolar range; and expanded the maxilla externally as high as the top of the canine fossa laterally for about an inch. These changes were produced and progressive without much pain or suffering, neither were they increased by handling the part. The growth of the tumour was very gradual for the last eight months, and during the latter period hemorrhages have been very frequent. Numerous small fine vessels ramified abundantly on the inferior and inner part of the tumour, which was composed of irregular, fleshy, firm elevations.

On the 9th of the month I operated in this way, and cut out the entire diseased structure. I detached the cheek extensively from its inner connexions to the superior maxilla, and then, with metallic elevators, raised the cheek, dragging it forcibly upwards and outwards, so as to reveal all that was required, at the same time with a gentler force keeping down the lower lip. A sound tooth was next drawn before and behind the diseased structure, so as to make sure of dealing with healthy parts, and then, with a strong bone forceps, two vertical incisions, nearly an inch in depth, were made, corresponding to the spaces from which the teeth were extracted; two horizontal incisions were then made, one on the inside along the palate plate, the other on the outer side, considerably above the alveolar range, through the soft parts down to the bone, so as to connect the upper extremities of the vertical wounds made through the bone; the bone all along the horizontal incisions was next clipped through by means of a bone forceps that cut at its ends like nippers, and thus the diseased part was fairly

and most clearly cut out. The part taken away measured an inch and a quarter in width, and three-quarters of an inch, or a little more, in depth, while its thickness exceeded three-quarters of an inch. The structure of the tumour presented a well-marked example of fibro-vascular arrangement. The hemorrhage was quick, very rapid, so much so that I cauterized very freely with the hot iron all the exposed surface. The result was satisfactory, the bleeding being quickly suspended.

It is not necessary to enter into further details; the recovery was perfect, the child being dismissed cured on the 26th, seventeen days after the operation. On the closest examination of the boy there was no deviation from symmetry in the features, and it was difficult to comprehend how much of the bone had been cut out without external division of the soft parts.

For the reasons already assigned, I shall again consider the deformity, hare-lip. Since the publication of my last Memoir on this malformation in 1856 (Dublin Quarterly Journal, February, 1856), several of the very worst cases have been operated upon by me, with the most gratifying success: and it is pleasing to reflect that my former observations were favourably received, the entire paper, with its numerous engravings, being reprinted in the "Journal für Kinderkrankheiten" for January, 1857, and most favourably referred to by Friedberg of Berlin, and others. The subject being minutely considered in all its bearings in the essay to which I have referred, I shall now only describe complicated cases, with the practical details or operative proceedings in each, which, I trust, will not be found deficient in interest or void of instruction.

Case IV.—*Double Hare-Lip, complicated with the widest possible fissure in the palate, on the left side; projecting maxilla and intermaxillary bones on the right side; successfully operated on, and with but little marks of deformity.*

Mary Connor, aged ten days, was admitted to Mercer's Hospital, September 12, 1856. This little deformed infant was the fifth child of extremely healthy parents, and the only one marked or disfigured in any way; the mother was an exceedingly well-looking woman, her features being regular and full of expression, but it would appear that hereditary disposition stamped the malformation, as the father had been the subject of hare-lip, and was operated on when very young; yet it is strange to conceive how the other children should have escaped, were there not some other influential cause at

the time presiding over, and influencing, and even arresting the development of the embryo. In addition to the malformed mouth, of which I shall speak presently, there was well-marked convergent strabismus, rendering the appearance altogether most repulsive. With the exception, of these malformations, the infant was plump and well nourished, having freely partaken of milk from the time of its birth. I need scarcely say the power of sucking was abnegated throughout. Taking the features respectively, a more distorted relationship could scarcely be imagined: the nose not only was dragged over towards the right side, but its apex was flattened and spread out, with the anterior part and extremity of the septum in the central fleshy piece of the lip, which rested upon the prominent intermaxillary bones; the right nostril was corrugated or twisted in a sharp curve inwards, owing to the right lip, just at its attachment to the central portion, being tightly bound down to the bone beneath, while the left nostril was completely flattened, and spread like a lintel across the wide naso-buccal chasm,—the curve of the ala being lost, owing to the extreme tension exerted by its outer border being deeply depressed, drawn backward, and firmly bound down by dense living union with the undeveloped left maxillary bone. The septum nasi, though right in its posterior third, in its two anterior was imperfectly developed, being too shallow in the middle, while in the anterior third it was prolonged in a most unmeaning form, while it was unseemingly hypertrophied where it met the intermaxillary bones, appearing, as it were, to thrust them more forward and upwards than they would have been by the irregularity of the maxilla on the right side; the labial fissure was wide enough to admit the finger into it, the left labial portion being miserably deficient, while the central piece was very small and corrugated upwards, and the right labial portion did not extend beyond the centre of the nostril at its own side. Owing to this most defective condition of the soft parts, the gaping communication between the mouth and nose was always visible, unless when the tongue was thrust therein; the most casual inspection revealed the left maxillary bone far back behind, while, on the opposite side, was protruded the crooked enlarged septum, with the viciously directed ossa intermaxillare, covered with hypertrophied gum, and sustained on the outside by the projecting right maxilla, while upon it rested the central curtailed piece of the lip, nearly on a level with the apex of the nose. (See Plate II., Fig. 1.)

The operation, then, was exceedingly complicated. The

Fig. 1.

Fig. 2.

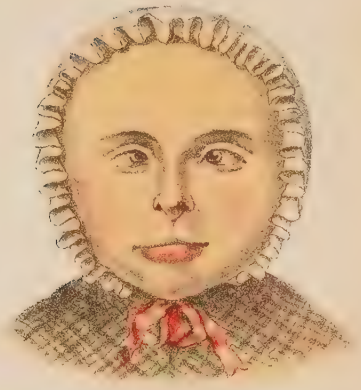

Fig. 3

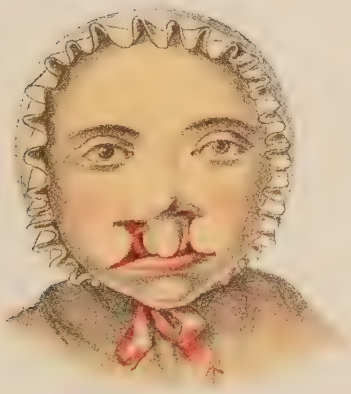

Fig. 4.

Mr Butcher's cases of hare lip

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following are the steps which I pursued, as accurately as I can convey them:—

A tenaculum was thrust into the most prominent part of the curve of the left labial portion, by which it was lifted upwards and outwards, so that a fine, narrow scalpel could be applied behind so as to free it and the corresponding ala of the nose extensively from the maxillary bone, to which it was so tightly pinned down; this being done, the tenaculum was let rest in the hand of an assistant while I attacked the centre piece by transfixing the central labial portion at its apex with a tenaculum, and dissecting it up carefully from the osseous projection to the septum; the tenaculum was then withdrawn and inserted into the right labial portion just where its curve escaped off the outer edge of the intermaxillary projection, or, in other words, its most convex point; this fleshy part was in its turn lifted up and cautiously raised by free division with the knife from the projecting maxilla; the cheek was dissected upwards and outwards even beyond the line of the infra-orbital foramen, great caution being observed not to let the knife pass so high as the exit of the nerve by sedulously keeping the edge flat to the bone; with the cheek flap, the entire ala of the nose and isthmus connecting it with the central piece were included, the soft parts being thus extensively and at all sides set free. It was clear that to effect any satisfactory result, the nose should be brought from its unnatural position to the central line, and this I effected after the following difficult way: the entire flap of the right side being lifted well up by the tenaculum (which, I may add, was never withdraw), and thus held by an assistant, I applied the peculiar cutting forceps which I use for such purposes (and will be found figured further on) considerably outside the attachment of the intermaxillary bones, and completed a vertical section with it through the external covering of the bone and its osseous tissue, reserving the soft parts behind as a medium for the vascular supply; I next, with a fine bone nippers, cut out a triangular piece from the vomer, where, in an unnaturally hypertrophied state, it expanded into the ossa intermaxillare; the base of this wedge was in front and corresponding to the angle between the two externally, whilst the apex of it separated the septum nearly altogether from the central piece, by this division, then, the lower edge of the septum was fashioned into what should have been its natural direction, while the central osseous piece, connected with the maxillary bone on the right side, was set free above; therefore, in a condition to be bent backwards and inwards, so as in a very marked way to

approximate the left maxilla; this was accomplished by the flat pliers such as I am in the habit of using, the blades being guarded with leather; with these same narrow-bladed pliers the septum was seized and cracked across high up, so as to allow it to come over to the left side in a commensurate degree with the cartilaginous portions of the nose; the hard parts being thus definitively arranged, the next proceeding was to pare the soft parts and bring them into position; the central piece was again seized with the tenaculum, a little to the right of the mesial line, and the left edge of the piece evenly cut into the nostril, the blades of the scissors resting against the tenaculum. In a similar way the right edge of the piece was cut exactly from the apex into the right nostril; this stroke of the scissors cut out the tenaculum so that the piece preserved a perfectly triangular form; the right portion of the lip was then pierced with the tenaculum, drawn out, and its curved margin removed, the upper part of the incision meeting the right of the central portion in the nostril at an acute angle; the left portion of the lip was dealt with in a like manner; and next came the re-adjustment of the several portions by suture. On careful inspection, the parts seemed well adapted for each other: the central piece lay back well, without drawing down the tip of the nose, an adjustment entirely to be ascribed to the removal of the wedge-shaped piece of bone. The first needle was entered a little above the lower edge of the ala on the left side, and about a quarter of an inch outside this point; carried across then from left to right, it was made to traverse the central piece nearly at its apex, and to strike the right portion of the lip high up on the inside, and carried through it to appear externally at a similar point as that on the left cheek; the needle was carried deep through the parts, so as to secure as good a grip as possible and guard against hemorrhage; the cheeks were then lifted forwards, as it were, upon the needle, until they approximated the central piece, and then a strong silk thread was thrown in a figure of 8 form from one side of the needle to the other, so as to prevent them from receding. Thus gentle apposition between the three portions was secured and maintained, the septal piece being in admirable position. At a considerable distance from the cut edge, and just above the red margin, a second needle was inserted, and the parts supported identically in the same way, a separate thread being employed. So likewise in the intervening space a third needle, finer than either of the others, was used, and a few turns of a separate thread placed upon it. After this, one long thread was cast round the lower needle in the

figure of 8 form, and then passed to the second, crossing the intervening space, and supporting the line of incision, and so on to the upper needle: great care being taken that no undue pressure was employed, so as to approximate the needles to each other, a practice which would be most reprehensible. The ends of each needle were then cut with the pliers; long, wide straps of adhesive plaster, slightly curved, were then placed from beneath the chin, so as to grip the cheeks and press them forwards, then passing up the temples and fastened on the forehead, the concavity of the straps being forward—this arrangement carrying out in a very effective way the results to be anticipated by the application of Hainsby's apparatus, the gentle sustentation of the cheeks forward, and so diminishing the tension on the needles, and avoiding ulceration.

Immediately after the operation, the infant got small doses of laudanum, so as to quiet her disturbance and produce sleep; hot flannels were applied around the abdomen and legs, and thus the pain was subdued, so that quickly she went to sleep and remained so for a lengthened time; before night she consumed a great deal of warm milk, and shortly after its drink went off to sleep again, the opiate being repeatedly given.

On the fourth day, ninety-six hours after the operation, the needles were removed; the twisted silk agglutinated to the wounded edges was suffered to remain; and to compensate for the gentle pressure of the cheeks forward, effected by the hand of an assistant during the withdrawal of the needles; wide straps of plaster, considerably narrowed in the centre, were put on to guard against retraction and separation of the recently united parts.

On the following morning, the fifth from the operation, twenty-four hours after the taking out of the needles, the adhesive straps were taken away, and with them came the threads that stayed after the needles. The parts now presented a most satisfactory state; the septum well kept its place, the nose was steadied in the centre, and the lateral labial portions were united perfectly, even throughout the red portion. No doubt the lip seemed tense and strained, and by this condition the lower lip was made to pout conspicuously, yet the transformation of the countenance was most remarkable. No one could possibly have recognised the child now as the hideous little creature of yesterday. (See Plate II., Fig. 2.)

Case V.—*Double hare-lip, complicated with double gaping fissure in the palate; projecting intermaxillary bones; successfully operated on, with scarce any deformity; coexisting hernia.*

W. K., aged twelve days, a pining, miserable, little child, was received into Mercer's Hospital on August 16, 1856. The mother of this infant was exceedingly handsome, with an intelligence and gentility in the countenance rarely indeed met with in this humble class; yet, on close investigation, there was a trifling irregularity in the features—the slightest appreciable diminution in the left side of the face, and the most trifling cast in the right eye, so small that it created some difficulty to localize the peculiar expression; it rather indeed increased her beauty, for without very minute inspection it was impossible to determine exactly which eye was at fault, or what rather caused the lustrous brightness; while the very deep dimples in the cheeks and chin only tended to heighten the sweet expression of the face. It may be thought I have dwelt upon these characters too long; I would not have alluded to the matter probably at all, except that it is the opinion of some eminent surgeons, that in all those cases of harelip some irregularity will be found in the conformation of the face of either parent —a doctrine which I have not seen fully borne out or even approximated to, in a very large number of cases. The child was a diminutive little creature, and so extensively deformed in the mouth, that he could not retain within it a drop of milk; it is unnecessary to add, he could not suck, and the artificial feeding of the child was a long, tedious, and difficult process. The maxillary bone on the right side was scarcely developed at all in front, while that on the left was nearly in a similar state; a wide gap intervened between the maxillary bone and the central piece on the right side, nearly three-quarters of an inch, while the projecting osseous piece stood prominently forward, supported by a thickened stalk, as it were a prolongation of the vomer, hypertrophied in an inordinate degree; on either side of this central piece and stalk, the palate was widely and deeply cleft the entire way back; the nose was twisted to the left side, and the ala of the nostril stretched across the wide gap on the right side; from the lip of the nose hung out a triangular-formed central piece of the lip, supported and attached behind to the projecting piece of bone; it was thicker and longer than that usually presenting in such cases; the left nostril was puckered with a twist to the right side; both lateral portions of the lip were exceedingly defective and ill-developed, and the

entire countenance was hideous to look upon: coexisting with this state, there was a large hernial protrusion from the lower part of the abdomen, which turned upwards, of somewhat a pyriform shape, and from four to five inches in its longest diameter; the contents, though very considerable, could not by the most delicate and careful handling be restored. As the creature was absolutely starving, thinning, and dying from an inability to swallow, I determined to try and rectify the malformed state of the mouth, and on the 18th I operated after the annexed way:—The central soft piece being struck with the tenaculum to the right of the mesial line near its apex, it was dissected freely from the bone, up to its base and beyond it, and its left side cut off into the nostril, and in a similar way the right, letting free the tenaculum with it. I next cut out, with a fine bone scissors, a small wedge-shaped piece from the hypertrophied bone running into the ossa intermaxillare, the base of which lay obliquely forwards and upwards; a gentle force then applied to the projecting piece fractured the stalk, but not so freely as to permit it to fall down or rupture the soft parts below and around; the hemorrhage was so rapid, and from a large artery, where the piece was removed, that I had to thrust a hot iron into the mouth of the vessel, and after a second repetition of the cautery it ceased to bleed. The right ala of the nose and the cheek in its vicinity were extensively detached, so as to allow the parts full freedom, and so as to approximate the mesial line. In a like way the left was loosened, together with the nostril, each part of the lip in its turn being drawn up and moved about by the tenaculum. Next, the curved borders were cut off, each by a single stroke of the scissors; on pressing the parts forward, it was astonishing how freely the cheeks yielded, owing to the unsparing way in which the knife was used; by no other means could the wide gap possibly have been closed; the long fine needles were next put in as in the former case, the upper one first, nearly on a level with, but considerably outside the ala, with the central piece transfixed near its apex, the lower needle's points of transfixion close to the red border, but far away from the cut edges, and so the needle in the centre; the silk thread was cast around each with the precaution insisted on; the ends of the needles were clipped off, and the cheeks retained forwards by the wide straps of adhesive plaster in a similar way; though the adjustment of the soft parts was brought about with so much difficulty, yet the tension was not very much, attributable in a most decided way to the effective manner in which the central osseous piece was cut, the most prominent part of its upper anterior surface being shaved off

in the wedge-shaped piece, and so its convexity forwards lessened, and pressure against the soft parts provided against. On the following morning, 19th, child doing very well, and took more milk than for days before, and slept quietly for long periods. The child went on in every way most satisfactorily, and on the fourth morning, ninety-six hours after the operation, I withdrew the needles, the septal portion and upper two-thirds of the lip being beautifully united, while the lower third was not so, the needle having partially cut its way out; yet this was not because of imperfect adjustment, for they lay together, but the part refused to accept of the union. I knew it would be hopeless to expect anything from renewed efforts at this period to bring about adherence in the notched lip; so abandoned the idea until the union effected had been hard and confirmed, and the little gastric derangement from the unnatural protrusion of the bowels in some measure rectified. From day to day I was happy to watch the permanent nature of the bond recently brought about and established, not predisposed or prone to carry on any degenerative or ulcerative absorption. It was pleasing to me, too, to see the subsidence of abdominal irritation, and, a calm being persevered in for some days, I was glad to try and effect the union in the part of the lip not closed.

On the 3rd September I slightly pared, or rather refreshed, the margins of the gaping portion, and inserted a long fine needle with the twisted suture; small doses of laudanum were then administered, and with the best effect, quieting the infant at once; it went on without a bad symptom, and on the morning of the 5th, seventy-two hours after the operation, I cautiously and gently withdrew the needle at once, supporting the parts by long adhesive straps; the union was complete throughout.

On the 7th the entire was beautifully healed, and all anxiety was removed as to the result of the operation. Now at this time the union was a firm permanent bond for ever; immediately after, violent gastric irritation was again set up, and in spite of every effort the child sank on the 16th.

This case affords an admirable lesson in several ways—how that by judicious operative measures the greatest deformity may be rectified. Again, how by timing judiciously any additional interference that may be required, satisfactory issue may be secured; and lastly, the benefit accruing from the separation of the parts, permitting an adequate supply of nutriment, to the well-being and strength of the little sufferer; to the advantages arising, strength, powers of repair, &c.;—from this increased

supply of food, may, I think, be fairly attributed the additional and effective energy to union, brought about and accomplished by the refreshing of the edges of the parts that at first refused union.

Plate II., Figs. 3 and 4, gives a faithful representation of the infant before and after operation; it will be seen that the operation was perfect, the mouth and nose admirably placed; the locality of the hernia is likewise represented; its contents were the cæcum and appendix, the termination of the ilium and a portion of the mesentery; the testicle lay behind all in the sac. The aperture in the abdominal walls, through which the contents escaped, nearly admitted the finger, but in no way during life, or after death, could the contents be returned, for strong adhesions and bands confined the parts in their new position.

Case VI.—*Double Hare-lip, with double fissure of the palate, the intermaxillary bones standing out directly, and, as it were, fused into the extremity of the vomer; successfully operated on, and with little consequent deformity.*

John Flynn, aged ten days, was admitted into Mercer's Hospital under my care, Sept. 30, 1856. He was the first child of a handsome young girl; there was no defect whatever in her face, or in that of her husband, and I very carefully examined both. Shortly after the child was born, it was seized with bad purulent ophthalmia, and, having laboured under it for some days before I saw it, the creature was in a pitiable state; the eyes enormously swollen, congested, with conjunctiva of a bright scarlet colour and purulent matter, streaming down the cheeks abundantly; however, by properly applied means, this wretched state of things was rectified—viz., sixty-grain solution of nitrate of silver dropped into the eyes daily; repeated syringing of tepid zinc collyrium between the lids, so as effectually to wash away accumulated secretions; the anointing of the lids with dilute citrine ointment nightly, and internally the administration of small doses of gray powder. Next came the question of operation: in the enfeebled state of the creature it would have been an imprudent measure, though I was very anxious to do it early; the difficulty of swallowing was so great, it was only by a wearisome perseverance that a sufficient quantity of milk could be got down; this was below the average that ought to have been consumed, but yet the child throve upon it, so great was the relief from irritation by the curing of the diseased eyes.

Prior to operation, which now forced itself prominently forward as a salutary measure, I carefully considered the relationship of the sound parts. On a superficial inspection, nothing could be more discouraging; on closer investigation, the difficulties were not lessened—the nose was entirely turned to the left side, and so curved at its extremity, from the tightness with which it was pinned down to the intermaxillary bones, that it resembled the beak of some bird of prey; consisting with this twisted deformity, the right ala was much higher up than the left; a wide cleft, nearly three-quarters of an inch, separated the central piece from the right maxilla, which anteriorly was scarcely at all developed, neither its palate plate; the cleft on the left side was not so wide, the maxillary bone coming farther forwards, and the approximation of the central piece; from the obliquity of the nose, as already mentioned, it, in some degree, contributed to a narrowing of the fissure; nearly the entire palate plate was likewise absent on this side, and the posterior part of the vomer was absent, together with the palate plates of the palate bones, so that the lateral, the right, and left fissures, separated in front by the vomer and projecting intermaxillary bones, formed one broad gap behind from side to side of where should have been situated the roof of the mouth; the projecting osseous piece was very diminutive, and hung by a contracted neck; the external parts were, on a similar scale, defective; the central bit, hanging from the tip of the nose, and adherent to the osseous projection, was unusually small, while the right lateral portion of the lip ran in almost a straight line from the anterior edge of the non-developed maxilla to the angle of the mouth; it was tensely bound above to this part of the bone with the right ala, and incorporated with it, much higher than I ever saw, so as to account for the extreme obliquity of the nose; to the uninitiated in examining and dealing with such matters, but one conclusion could be arrived at, namely, that it would be impossible to close over the gap. But, I shall presently explain how a favourable result was brought about: the left portion of the lip was well formed and thick, with redundant material in it, as judging by comparison with the opposite side. To add still more to the revolting aspect of this poor infant, there was divergent strabismus of the right eye. (Plate III., Fig. 1.)

On the 24th of October I operated after the following manner: Having first dissected upwards and backwards the central fleshy piece from the osseous, and cut it into a triangular form for the septum, I was obliged in this case to remove the projecting intermaxillary bones taken together, the bit was so

Fig. 1

Fig. 2.

Fig. 3.

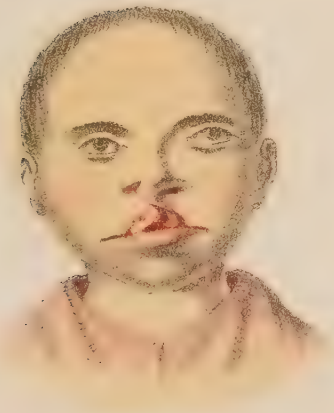
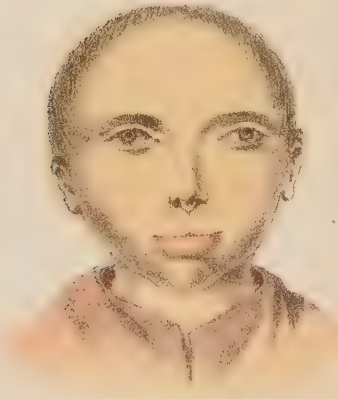


Fig. 4.



Mr Butcher's cases of hare lip.

Forster & Co. Lith. Dublin.

small, and so pedunculated, as it were, when thrust out from the vomer, that I was confident that nothing could be made of it; the vomer was then seized in the pair of flat pliers, covered with leather, and twisted from left to right; it had to be fractured so as to allow of the nose being brought into the mesial line. I next freed, extensively, the left ala and cheek from the maxilla, and then even more boldly detached these parts on the right side, bound firmly in such an unnatural position high up; the cheek on this side was also loosened from all connexion to the maxilla, as far out even as the malar bone. It was astonishing to witness the effect of all this: the nose was permitted to come down, and, with it, the upper part of the lip on this side, so as to let it appear full and prominent, overlapping a considerable part of the gap, and giving a rotundity to its edge, which was strained before, but yet with the cheek pretty prominent, external to this tense border; the right portion of the lip being then carefully seized with the tenaculum, the greatest caution being observed to spare all that was possible, the edge was removed by one stroke of the scissors, and so the left was dealt with; the needles were inserted here with great care, and the upper one in a particular way, so far as that a considerable strain was made upon the lateral portions of the lip, and, as a consequence, upon the alæ, so as to draw them down to the full extent that would be permitted, and then the upper needle was inserted considerably above and outside the left ala, and the cheek being transfixed here, the needle, on being carried across, was given such an obliquity as to make it pass below the cut-off edge of the vomer, and then this was made, as it were, a fulcrum, and the point of the needle turned upwards to transfix the right side of the lip, at a point opposite to that on the left side. The effect of this manœuvre was to bring down the cheek at either side, so as to afford greater material for the constriction of the upper lip; by doing so, I could look forward to adhesions being set up within from the recently severed part, and such an adjustment rendered permanent after a few days, before any mischief could be set up by the pressure of the needle against the bone. The more I reflected upon the result, and my pleasing recollection of the effect, it is to me an inducement to recommend it with my warmest sanction. It is only those who are compelled to act under the most discouraging, and sometimes hopeless emergencies, that can or will appreciate hints from those practically immersed in difficulties. I freely give this proceeding my warmest commendation: by its fulfilment, the second and third needles were made to act with great precision, and, absolutely, with a marvellous accuracy towards

constructing, and in adjusting the upper lip, when, by gentle force from behind, the threads were cast round the needles, and made to restrain the retraction of the pierced parts. After the needles were clipped away, and the central little piece stitched back and to the lip by two points of interrupted suture, it was most pleasing to behold, encouraging to look upon, what had been and might be done under similar almost hopeless deformity. Straps of plaster were placed from beneath the eyes, and brought down under the chin, so as to assist in keeping the cheeks down.

After the operation, the infant was placed on small doses of laudanum, and in an hour after it drank warm milk more freely than before the operation, and absolutely with an aptitude and craving that astonished me. This state of things was repeated several times during the day, and such was the report when I visited the infant at night.

On the following day, the 25th, I gave several tea-spoonfuls of wine, and continued the small doses of laudanum, the child taking at intervals copious feedings of milk. So it went on most favourably, and on the 28th I removed the needles (ninety-six hours after the operation); all appeared well; left the adherent threads behind, and applied straps of plaster to support the cut edges, and wider ones to prop the cheeks forwards, as described in Case I., while additional ones were put on, so as to drag them down.

On the 29th, with the removal of the straps, the threads came away, and the union was perfect throughout. Straps of plaster, with the two objects mentioned, were now had recourse to for giving permanency and direction to the union, then to keep the cheeks forward, and then to draw them down towards the chin, for though the union between the cut edges of the lip was secured, it was not so clear that the junction of the cheeks with the refreshed surfaces over the bones was so complete as to resist retraction, so to insure a maintenance of position, that, considered efficient and approved of from the first, every precaution was adopted.

After a few days it was apparent that results scarcely to be anticipated were realized, and the child was sent home scarcely with any deformity. (Plate III., Fig. 2.)

Case VII.—*Single Hare-Lip, complicated with extensive and wide-spread fissure in the palate; with projecting maxilla and intermaxillary bones, the latter firmly attached and most prominent; successfully operated on, and but little trace of deformity.*

Robert Cleary, admitted into Mercer's Hospital when only twelve days old, September 30, 1856, and placed under my care. He was the eighth child of a most comely, healthy woman; all her children were well-looking, free from defect, and healthy; the father was a most respectable man; he had been born with hare-lip, and operated on when young, and when this child was born was thirty-six years of age. It is strange to conceive in this instance, as also related in Case I., where the father was afflicted with hare-lip, yet that a number of children should be born healthy, and the fifth malformed, so also, in this case, that seven should have escaped, and the eighth deformed. I examined the father of the child whose case is under notice with great care, and found that he must have presented the same complicated case, somewhat, I conceive, in a modified degree: the lip was cleft at the left side, and the union of it tolerably good; a notch, however, remained at the red border; the projecting piece had evidently been sliced off, and in this cutting, which, probably, was too deep, the teeth were injured, and never again appeared. But there was this remarkable fact established,—that the cleft in the hard palate had positively approximated; the edges were nearly in contact. And again, the man perfectly remembered how, when a little fellow, the fluids escaped out of his nose when in the act of drinking, which only entirely ceased when he was grown up. This fact, established by this undeniable authority, is of itself a powerful argument, as I have laid down in another place, for early operation. Peculiarities of rare occurrence, and difficulties too in the way of operation, presented in this case, similar to cases which I have operated on myself some years ago. Any objection that might be urged against the conclusion, because I was not certain of the amount of deformity that existed prior to operation in this special case, and presumed so salutary in this all important result; but I can speak now with confidence on the matter, from absolute observation on changes brought about and nearly perfected in a few years: wide gaping fissures, in some nearly closed, in some altogether obliterated, by that all-important law which I appealed to as an additional, I would say, compulsory force for early operation. The words are in my monograph on hare-lip:

—"I do not think the all-powerful law of the coalescence of opposite sides has become extinct, annihilated by birth, and therefore should be made available towards furthering reparation"[a]. True and anxious observation have now set at rest the propriety of the reasoning by demonstrating the fact. I do not wish to be misunderstood in this matter, and therefore, giving room to cavillers, I confidently state that, in the ordinary fissure of the hard palate, coincident with bad cases of hare-lip, the osseous parts will tend to come together if early operation be adopted, a result which will not be brought about by operation at a later period. And further, let me not be misunderstood to state that, when there is total absence of the palate plate, as in Case III., that such a result could be looked for. It must appear ridiculous my supposing that this reading might be taken; but, to guard against misprision, I simply advert to it, at the same time laying double stress on the force of the aphorism which I have laid down. In this infant the aperture between the right and left portions of the lip appeared a wide, almost square, gap, bounded in a very unusual manner above by a narrow slip of the integuments passing from side to side, connected high up to each on the right side, even from the septum, and on the left to the lower margin of the ala; the left portion of the lip was thick and vertical, while the right was, as it were, rolled over to the corresponding side with half a turn, thus revealing the red mucous margin from the highest point to the right angle of the mouth; the nose, too, was turned with the septum towards the right side; the right nostril almost vertical, while the left was flattened, being expanded to the left border of the deficient maxillary bone, as will be presently noticed. This configuration of the wide gaping nostril above, and the deficiency in the alveolar range below, with the narrow isthmus of integument between, and the projecting intermaxillary bones on the right side, constituted a combination very novel and singular in its ugliness, and disheartening to anticipate benefits from operation. The hard parts, the maxilla on the left side, was not at all developed in front, and deep down, far back, the upper angle of the left portion of the lip and corresponding ala of the nose were fastened, absolutely expanded, matted into it; while, on the contrary, the right maxilla was viciously directed forwards, and, fused into its front edges, were the intermaxillary osseous pieces, prolonged by a dense, firm, hypertrophied gum. So prominent and developed was the latter structure, as to impart that peculiar evolution of

[a] Page 30.

the lip already noticed, and so remarkable in the picture. (Plate III., Fig. 3.) The gap then between the solid parts was so wide that absolutely the index finger could be passed into it, and it gradually diminished in its backward course through the palate bones.

With much weeping and doubts of success among the friends, the child was committed to my care, and yet, with an almost certainty of success from deeply impressed antecedents, I acquiesced in their wishes, and operated after the following manner.

October 24th. The child, being rolled in a sheet mummy-wise, was supported in the arms of the nurse with its head resting against her shoulder, and steadied so by an assistant. Having taken hold of the left portion of the lip with a tenaculum thrust into the most convex part of the curve, it was lifted upwards and outwards, and the knife freely applied with repeated careful sweeps, so as to liberate and extensively set free not only its upper angle, but the ala of the nose and the cheek in this region far outwards, so that the slightest traction enabled the entire cheek to be brought towards the mesial line with great facility. The instrument was then let rest in the hand of an assistant, while, with a second tenaculum, I seized the right half of the lip, and, in a similar way, cut it from the intermaxillary projection, up to the vomer, and outwards to a line let fall from the infra-orbital hole. Of course the right ala of the nose was set free by this extensive dissection, and the turn of the lip was partly unrolled and came down; the soft parts permitting thus to be freely raised, the forepart of the maxilla, with its adherent projecting deformity, was clearly brought to view. It was apparent that not only were the intermaxillary bones at fault, but likewise the anterior part of the alveolar range of the maxilla; it was too prominent to complete a perfect arch if the left side had been normally developed; therefore I applied my own cutting forceps for such purposes, the blade cutting vertically from before through the soft parts and then the osseous material, but stopping short there, leaving intact, uninjured, or severed, the soft parts behind, the object being not to interfere with, interrupt, or cut off the vital supply of the bone about to be pressed back into a natural position; this precaution being adopted, with the flat pliers covered with leather, the piece was bent back with great facility: so perfectly adapted was the section to the angle required, but yet it could not be made to hold its place nicely until the end of the vomer was seized too in the pliers, and bent from right to left, and made to take its mesial position;

this being effected, the framework remained in the direction required. I next proceeded to pare the lips, and first the left one steadied with the tenaculum, its red edge and rounded border was cut with the scissors into the nose, and so likewise the right half was dealt with. It was very remarkable, after the free liberation of the right ala and lip, how manageable the curve was, a part of it disappearing, and thus assisting materially in the preservation of a greater portion than otherwise could have been secured. From the feebly depressed state of the parts behind, and from the freedom of the cheeks, the cut edges came well together, and the first needle was inserted external to the ala and a little above its lower edge, and so from left to right; the parts were then shoved forwards well upon the needle, until they actually met, and then the silk thread was thrown across in a figure of 8 form; so, likewise, was the second needle put in, just at the junction of the red edge and skin, and fully half an inch external to the cut edge, and so the cord was cast round it; then a third, finer needle, was placed between both and retained in a similar way; the one long piece of waxed silk was then cast in a figure of 8 form from one needle to the other, covering in the intervening spaces with the precautions observed in Case I. The ends of the needles were next clipped off, and the cheeks kept forward by straps of plaster from beneath the chin to the forehead, as already explained. After the operation small doses of opium were given, and in a few hours milk was taken by the infant; so everything went on most favourably; and on the 28th, 96 hours after the operation, I removed the needles; the threads, being firmly clotted, were suffered to remain, and supported with adhesive straps; the parts promised well.

On the following morning, in taking off the straps, the threads came to, and it was pleasing to see the lip united accurately from one end to the other; no notch whatever in the red border; all was supported for some days with adhesive straps, and quickly the needle-holes closed; and on the 6th of November the child was dismissed, the deformity being so trifling as to surprise several who witnessed the case, and astonish the parents of the little creature. (Plate III., Fig. 4.)

Case VIII.—*Double Hare-lip; double fissure of the palate; projecting intermaxillary bones, with unusually hypertrophied gum; most successfully operated on; scarcely any deformity.*

This case, most peculiarly interesting as having occurred in the brother of a little girl that I operated on some time before,

Fig. 1.

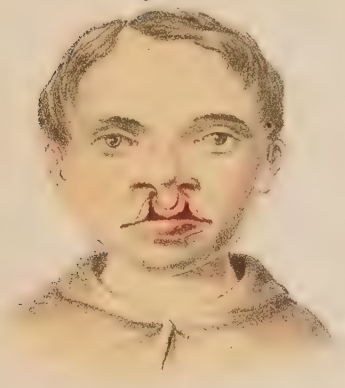


Fig 2

Fig 3.

Fig.4.

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and whose appearance, both before and after operation, is represented in my former paper on the operative measures necessary in the treatment of hare-lip, and published in this Journal. The malformation in the elder child was most remarkable, while that in the subject of these remarks was scarcely less.

Charles B., aged one year and six months, admitted to Mercer's Hospital October 28, 1858, with most shocking deformity, occasioned by complicated hare-lip. The nose was widely expanded, almost flattened on the cheek, while its apex was thrust up suddenly by the projecting intermaxillary bones; the nostrils were stretched across two wide gaps, making a common cavity of the mouth and nose; the right was the wider, the more dragged of the two: striking out in front from the cocked apex of the nose, was a larger fleshy central piece than usually met with, it was thicker also, and more redundant in material in every way. The lips were also peculiarly formed, being more elliptical, and more extensively covered with red border, even from one extremity to the other, while small little flaps were projected into the nostrils. The hard parts were greatly deranged; the central piece was more massive in every way than that at all usually met; it was considerably deeper or thicker, while its transverse measurement exceeded, by the unnatural hypertrophy of the gum shielding the edges of these bony parts. This state might be looked on as salutary, when, after investigating the maxillary bones on either side, the defective development became apparent, the anterior edges falling far short, and the alveolar range totally deficient. (See Plate IV., Fig. 1.)

On the 2nd November I operated in this way: having seized the central piece with a tenaculum, it was quickly dissected upwards and backwards, above the projecting bone, to its root in the vomer, and then it was pared into a V shape to constitute the septum; the projecting bone was then steadied, and with a flat cutting forceps its convex anterior edge was cut away, a small wedge-shaped piece taken out at its junction with the vomer superiorly, while the great depth of its stalk inserted into the vomer admitted of this thinning and taking away, withal affording a sufficiency of osseous material to admit of fracture and bending back of the piece, without detachment or falling down of it. These manœuvres were executed with great precision and delicacy, as any undue violence would easily have frustrated this conservative effort. The lip was next laid hold of with a tenaculum at the inferior part of the most convex portion of its curve, and, with a stroke of the curved scissors, the red border and tenaculum were cut away, great caution being

observed not to remove the least part of the little flap projecting in the nostril, except the mucous membrane covering its anterior edge. In a similar way the right was dealt with, the same attention being bestowed to save as large as possible the little flap in the nostril, and for this purpose the curved scissors that I sometimes use was particularly applicable, so that, when its round edge was taken away, in conjunction with a similar piece in the left nostril, they could be drawn down a little and in contact with the septal portion. By such a proceeding, it will be observed that the soft parts were altogether brought down, giving considerably more material for the construction of the lip; and so it was, for, after the first needle was inserted outside and on a line with the left ala, and then each lateral part of the lip drawn down, that the needle traversed their upper little flaps, and pinned them to the apex of the septum. When the cord was thrown round the needle, after the alæ of the nose with the cheeks were pressed forward, it was astonishing how well the cut parts came together, and the quantity of soft parts that remained below the needle. A second and a third needle were in a similar way put in, the lower one first, and during its passage made to describe somewhat an arch, to compel the lowest bit of the lateral parts to come down, and prevent, if possible, a notch being left, this manœuvre answering admirably, in conjunction with the concave incisions, to produce the desired effect. When all the needles were inserted, fastened, ends clipped off, I had good reason to be satisfied with the result. Wide straps of plaster passing from beneath the chin in half a circular way up to the forehead, so as to force the cheeks forward, were put on, as advised in the former cases; small doses of opium were given to allay pain, and soon the child slept, and partook freely of some boiled milk. During the following days the child was fed upon milk, chicken broth, and crumbled bread, and on the 6th November I removed the needles, 96 hours after the operation, and the union was perfect throughout, and beautifully even and accurate. Straps of adhesive plaster were put for support; from day to day the edges were sustained, and on the 18th there really was scarcely any trace of deformity, mere lines marking out the extensive incisions which were required. It was also very remarkable how rapidly the child was increasing in weight and bulk. (See Plate IV., Fig. 2.)

Case IX.—*Double Hare-lip, complicated with double-fissured palate, and inordinately developed central intermaxillary piece; successfully operated on, and cured, with little deformity.*

H. M., aged 2 months and 2 days, admitted into Mercer's Hospital December 1, 1858. This child was the fifth of healthy parents; moreover, the father was well-looking, and the mother pretty. I had a full opportunity of examining the parents, and there was not the least part or feature awry; on the contrary, I would say they were very regular and perfect. The child was a small, poor-looking little creature, and nothing could be more unsightly than its appearance. The alæ of the nose were quite flattened, dragged outwards at either side, while the apex was thrust forward, made tense in a most curious way by a large piece of bone projecting from the vomer. Now it was the largest piece I ever saw in the central line at this period of life. It was massive in its osseous structure, as well as in the inordinate amount of hypertrophied gum which embraced and covered in its unattached surface; its depth or thickness was even more remarkable than its width, and its stalk or connexion with the vomer was nearly half an inch thick, while the vomer itself partook of this same excess; for fully half an inch at its contiguous surface, this piece stuck straight forwards, the tip of the nose being bound tightly upon it. This protruding central piece, as I have already stated, was then inordinately enlarged, prominently thrust out, osseous, dense, cartilaginous, and firm in its expansion and in its thickness—pedunculated, no doubt, but of such proportion and firm material as to resist any forcible pressure backwards or to either side. Far beneath, and towards the back of the stalk, lay the imperfectly developed maxillary bones, and from this point, at either side, proceeded the double cleft in the hard palate, each widening as it passed backward, there being no trace whatever of the soft structure of the same name. The receding lateral portions of the lip were very miserably developed, and it would be absurd to suppose, with some, that their volume had not been interfered with; it surely was stricken by the same cause as actuated the non-perfect conformation; they passed towards the angles almost vertically from the nostrils, but a small as it were pressed-up portion, projected over the junction of the lower, and which afterwards yielded, and admitted of extension in the after steps of the operation. (See Plate IV., Fig. 3.)

In this case sustenance could hardly be conveyed, as the act of swallowing forced out the fluid, and all taken into the mouth in this way was nearly lost. Nothing could have prevented my

operating at once on the case but that erysipelas suddenly showed itself in the ward, in a patient with axillary abscess of a few days' duration; then I had to put it off, yet all this time the wretched child was receiving but little sustenance, and its enfeebled state but little improved.

On the 15th, the patient being cured of erysipelas, and dismissed, on the 18th I operated on the child thus:—

The child being rolled in a sheet, and held in the arms of a nurse, its head pillowed above her left breast and resting against the shoulder, it was so steadied by an assistant. I first very rapidly dissected up the mesial piece of the soft parts, forming it for the septum, and at the same time freed the nose. I then, with scissors-like bone forceps, cut off the convex surface of the projecting bone, at the same time taking away the lower thickened part of the septum, both sections making a V shape, the lower side of the triangle being nearly twice the length of the upper, the base being almost directly forward. After the removal of this thick slice, sufficient depth of bone remained behind to permit of the part being gently broken, and the piece pressed back; this was done after the sides of the central piece were cut in somewhat the form of a key-stone of an arch, and adapted to fit in the gap between the maxillæ; the anterior edge of each maxilla being freshened, the central part was steadily pressed into its place, and it fitted admirably, with no tendency whatever to falling down, owing to the shape of the receiving and received parts. The proceeding was almost exactly similar to that performed in the fourth case in my memoir on Hare-lip. I should here mention that, on dividing the bone, the hemorrhage was rapid, profuse, and fearful, as occurring in this emaciated creature, and at this tender age. I placed the point of my finger upon the part, and then, as quickly as possible, thrust the sharp point of a cauterizing iron from the furnace into it, and thus arrested any further loss. This precaution should never be lost sight of, namely, *when much is to be done about the mouth, a cautery should always be ready at hand.* Having thus secured the bleeding vessel and staunched its flow, I freely cut loose the cheeks and alæ of the nose from their attachments to the maxillary bones, and, having done so, pierced each lateral piece with a tenaculum on the line joining the termination of the unnatural curve with its straight direction, and having committed each instrument to the hand of an assistant, removed the edges with the straight scissors. The needles were next inserted; the first on a line with the alæ and far out from the cut edges; the soft parts readily came forward by gentle pressure to touch each other, and the cord being thrown around

in figure of 8 form, were thus prevented again from receding; the second was put in at a similar distance from the edge as that observed on introducing the first, and immediately at the junction of the red border and integument; so, likewise, the cord was passed round this one, and the lip rendered nearly perfect in its lower margin; the needle between both was then inserted with similar caution, the ends were clipped off, and the cheeks supported forward with the long straps, as mentioned in former cases. In this instance I could not permit the piece which I shaped for the septum to be pierced and held down at its angle by the first needle inserted, and as I have almost always been enabled to do; it could not be transfixed far enough from its angle to give any security of hold without the tension produced bringing down the tip of the nose entirely too much; therefore, with a curved needle I put a stitch of the interrupted suture, so as to retain its apex in contact with the cut surfaces of either side, where they came in juxta position above. When completed, all promised far better than I anticipated, and looked admirably well. The child was put to sleep with opium, and I was glad to find, on visiting the little creature in the after part of the day, that it had taken milk freely, and slept again.

Everything went on most satisfactorily, and on the 22nd I removed the needles, 96 hours after the operation, and was gratified to find the union perfect throughout, except just at the apex of the septal portion; this, however, was of little consequence, as I could depend on being able to steady the bit and get granulations to fill up its deficiency; but the lip was fairly and firmly united down, even through its red border. The parts were well supported with adhesive straps, and the septal portion steadied back with a narrow strip, the cheeks retained forward as before.

On the 29th, the report states, the union between the sides is beautifully perfect and permanent; the needle holes are all healed, and remarkable for being very far outside the line of union between opposite sides; and now, too, the central piece was incorporated by new structure with the lip, and permanently healed. (See Plate IV., Fig. 4.)

Case X.—*Double Hare-lip, complicated with double fissured palate; projecting intermaxillary bones, with great deformity; operated on successfully, and with but little trace of deformity.*

J. S., aged three years, admitted to Mercer's Hospital April 1, 1859, with a most shockingly complicated hare-lip; there was

double cleft in the lip; there was double cleft in the palate. The mother was young and handsome, but the upper alveolar range was defective; the right half was narrow and contracted as contrasted with the left. In this infant the central projecting osseous piece was large, and covered by hypertrophied gum, which projected over the lateral portions of the lips, at least beyond their edges; it stood straight out, with two milk-teeth cut; upon this solid portion the central piece of the lip was placed, and bound down on a line with the tip of the nose, which was densely fastened to this abnormal growth. The maxilla on either side was defective in its anterior development, and owing to this cause the palate was deeply cleft on either side, a wide space being in front, and a deep common chasm behind, the palate bone being deficient; the nose was spread out, and irregularly so, the right nostril being dragged far more outwards than the left, it was flattened down and deeply depressed, while the nose held its mesial position; the lateral portion of the lips, particularly the left, was exceedingly defective, but much additional material might be made available from the manner in which the right portion was developed by a considerable flap within the nostril. (See Plate V., Fig. 1.)

On the 6th of April I operated on the child in this way—being rolled in a sheet, and steadied in the manner described in Case IX., I struck the central piece of the lip with a tenaculum, liberated it most freely upwards and backwards, until stopped by the protruding bone at its junction with the vomer. I then shaped it with the scissors, in the way I have so often described, and having lifted it out of the way, with the cutting forceps I pared the convex edges of the solid piece, by two vertical strokes of the instrument, sedulously protecting the little teeth, and next having removed a triangular piece, after the manner described in Case IX., but yet not at all to the same depth, I bent the piece back, completing its fracture with the flat pliers, yet in a guarded and most gentle way, not to rupture the soft parts, or break down extensively the denser tissue behind; by this manœuvre, the piece was admirably placed, projecting no further in front than to offer an even support to the soft parts when brought into juxtaposition; this being accomplished, the lateral portions of the lips, together with the alæ of the nose, were most extensively liberated after the manner, and fully to the great extent that I have before laid stress upon; the right was particularly so dealt with, to enable the ala to be brought forward, and allow the projecting flap to come down and compensate materially for the parts defective. The lateral pieces being seized in turn with the tenaculum, and cut

Fig. 1

Fig. 2

Fig. 3.

Fig. 4

Mr Butcher's cases of hare lip.

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carefully with the straight scissors, when applied to each other, proved a very perfect adaptation. Three needles were employed: the first entered at the left side, in a line with the ala, but far away from it, and, in traversing from left to right, transfixed the lower part of the septal piece, steadying it beautifully, and making it lie up against the mesial septum; thus the needle carried across met in turn the right portion of the lip, transfixing it, and appearing at a point on the right side opposite to that of entrance on the left; the soft parts came readily forward on the needle by gentle pressure from behind, and then a few turns of the silk cord stayed their position, prevented retraction; directed by the same caution, the second needle was inserted at the margin of the red border and skin, the point of entrance and exit in either being accurately in accordance with the first needle. The third needle took the intermediate space between both.

As in the other instances I have described, the infant was put on small doses of opium, and with the best effects. Shortly after the operation, the child took freely of milk, and went quickly to sleep again. Everything went on in the most satisfactory way, and on the tenth, the fourth morning after the operation (ninety-six hours) the needles were withdrawn. The threads were adherent; so they were left undisturbed, and the parts supported with long straps of adhesive plaster; so, likewise, the cheeks were maintained forwards by the long straps carried from beneath the chin upwards to the forehead, as in former cases more minutely described.

On next day, threads and straps being taken away, the extensive incisions were united throughout, and it was truly remarkable to observe how little deformity was present—the nose being rendered almost perfectly symmetrical; the right nostril curling only a little, but the lip was exceedingly perfect, and the osseous central piece was steadied beautifully, and the two little milk teeth showed favourably for the effort put forth to save their central piece.

On the 30th, even the needle marks were just obliterated, and really the lines after the incisions were not thicker than a thread. (See Plate V., Fig. 2.)

Case XI.—*Single Hare-lip; very wide cleft of the soft parts; complicated with extensive gaping fissure in the hard palate on the right side, with projecting intermaxillary bones; successfully operated on, and cured with little deformity.*

J. S., a male child, aged three months, was submitted to my care in October, 1859. The infant was horribly deformed with hare-lip, and though an example of what is called a single hare-lip, yet nothing could be more unsightly, or present much greater difficulties as to its management. The cleft was on the right side, the nose was turned over altogether to the left, the vomer, where inserted into the ossa intermaxillare, being, as it were, suddenly twisted in this abnormal aspect, while standing straight out, was the interosseous piece, with a large quantity of hypertrophied gum, rendering it still more unnatural. The maxillary bone on the right side not being developed in front, and the left with the intermaxillary bones being so changed from their natural site, as a sequence, the cavity between the mouth and nose was one wide gap, into which the tongue was occasionally thrust from below. The ala of the nose was spread quite flat across the space, and at the same time dragged backward as it passed externally, and the ala at its termination or rounding was matted into the bone.

From a cursory examination, it would be deemed impossible to restore this feature to anything like what it ought to be, yet I had great hopes of doing so, from a practical acquaintance with such matters. The lateral portions of the lips were diminutive, yet they were thick and more curved than usual under similar circumstances. (See Plate V., Fig. 3.)

Dr. Bevan and Mr. Behan saw this child with me, and on the 24th of October I operated after the following manner: Thrusting a tenaculum into the left portion of the lip, low down at its curve, I was enabled to lift it up, and with a small-bladed scalpel liberate the nose and cheek extensively on this side, dissecting close to the bone freely, and with decision. The tenaculum was then rested in the hand of an assistant. I proceeded to deal with the projecting bone by cutting out first a small triangular piece of the vomer where fused into it above, and then with my own forceps for partially dividing the projecting piece, applied it far back, even to the anterior edge of the maxilla, and divided it in the way already described, without interfering with its vascular supply through the soft parts behind. This being done, the flat pliers with a little force pressed back the piece. I should here mention that before pressing it back, it was so malformed, so misproportioned, I

cut off a thin slice of the hypertrophied gum at its end, to permit it readily to come in contact with the maxillary bone on the right side, which was freshened to facilitate and bring about union between them. When so adjusted, nothing could be better; the alveolar arch seemed well constructed. I next seized with the tenaculum the right portion of the lip, at a point corresponding to that on the left side, and dissected up the part together with the ala and cheek, even farther outwards than on the left side, so as to permit that looseness and flaccidity, essential to the adjustment of opposite sides, without undue restraint; the lips being liberated by the extensive dissection alluded to, their edges were cut off with the straight scissors; the wounds being carried well up into the nostrils, and commencing below half a line beyond the beginning of the curved portions. These surfaces were prepared, in every way fitted, for accurate adjustment, and thus tension was warded off, that nothing should interfere with union. The first needle was inserted on a line with the left ala, and fully a quarter of an inch external to it, and then forced from left to right, and transfixing in the same deep sweep the portion of lip on the opposite side—the needle appeared exactly at the same point relative to the corresponding ala; the cord then thrown around, the checks well forced forward, it soon retained the cut edges in position, and offered an insuperable obstacle to their separation from each other. The second needle was put in close to the red borders, exactly at the junction of its red margin with the skin, and three-quarters of an inch outside the scissors, wound and carried from left to right in the arc of a circle, so as to depress, draw down, the mesial piece, so as to create a central fulness; the cord too was cast around it. The central needle was put in with similar inclination to the first, and a point of the interrupted suture was placed on the inner surface of the lip, so as to accurately adjust the now pouting central portion of the lip, created in the way described.

It would be impossible to convey any idea of the change wrought upon this infant by the operation; absolutely, the cast and character of the whole face seemed changed. The adaptation of parts was unblamable, and the restoration of nose and mouth excellent.

The infant, after the operation, was put on small doses of opium, which kept up for some hours almost incessant sleep, the little creature only awakening to be supplied with milk, which he took off vigorously.

On the 28th, ninety-six hours after the operation, I removed the needles, and nothing could be more satisfactory or

encouraging than the appearances displayed. Every portion of the cut surfaces accurately grew into each other; a permanent living bond of union was established, and the nose stood well up and straight. The manœuvre to secure the red border without a gap was most fortunately adequate. Straps of plaster were then put on to retain the cheeks forward, and to support the recently united parts directly; and as an adjunct to the latter, wide straps were passed from beneath the chin up the forehead, in a semilunar kind of way, as heretofore described.

On the 2nd of December the child went home to the country, cured, with scarcely any deformity. (See Plate V., Fig 4.)

I have selected this complicated series of cases from amongst many others, not promising a like amount of interest, and attached to each the minute particulars of every operative measure employed. All, save one, were under the observation of a large class of pupils, and submitted to treatment in hospital practice. On a review of the management of these cases, there is not a single point that I would like to alter or change, and I wish steadily, considerately, moreover, to endorse each conclusion arrived at in my former paper, with whatever weight may be attached to my name. I still yield a preference to the forms of scissors which I have described and figured, and believe them to be superior to the bistoury, for the reasons assigned, and I shall quote from my former communication on the subject this passage again, with my warmest approbation: "In addition to what I have already written about the management of the central piece of the lip in the double form, I have only to add, that when it is large enough to come down on a line with the red margins of the lateral portions, and even covered with a red border, I do not save it to make a part of the lip below. I have seen it, when preserved, fail to accept the union on one or the other side; and I have also seen a double notch occasioned by its preservation"[b]. This condition seldom or never maintains, unless when the intermaxillary bones are projecting, and then the nose is matted and implicated with the central labial portion, so that there is even a tendency to the retraction of the piece, when the nose is properly set free, and most likely to be followed by the results mentioned; therefore, it is better to shape it for the perfect formation of the septum, and the superior part of the lip, two-thirds if possible; by such an arrangement, such disfigurement as that adverted

[b] Page 42.

to, will not be entailed. Should, however, the surgeon wish to make the experiment for himself; the scissors is by far the best instrument which he can employ to shape the part. It is ridiculously absurd to suppose that by section accomplished with it, as some have imagined, the parts are "too much bound to accept of union." The truth of this statement is negatived by the numerous cases which I have given, where constantly the central part was beautifully wedge-shaped, adapted above for the formation of the septum, and pointed below to the finest angle for union with the lateral portions of the lip, entering into its two upper thirds in many instances, and playing an important part there, and with a result consummated to the fullest anticipation. I would simply say in reference to this silly objection, if the scissors wound is likely to be "bound" in its action, the knife would require a brisk aperient on its edge to make it more effective.

In passing, I should wish to advert specially to the several ways in which I have treated the distorted osseous parts, some of them novel in their adaptation, and, as stated, most successful in their results, as illustrated by cases in my former paper, and again confirmed in their utility by more extensive experience, as detailed in the present observations.

And now, as to the mode in which the cut parts are to be kept in contact. Much has recently been said and written about the superiority of metallic wire sutures, gold, silver, platinum, iron, &c., some preferring one kind, some another, some preferring the interrupted thread suture, as Sir A. Cooper did in his later practice. I would simply state that the advocates for one and the other are quite welcome to their views; at the same time, I have seen extensive ulceration, cutting out and gaping of the parts, follow after each of these methods[a]. I do not deny but that I have seen a like result from the twisted suture improperly applied; at the same time, I am thoroughly convinced, not from any theory or nonsense, but from practical experience of the matter, that the twisted suture

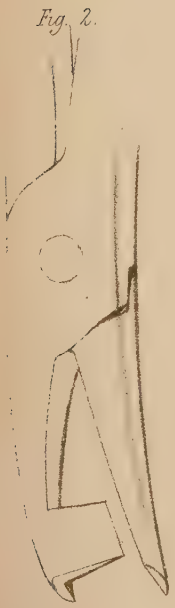
[a] Since the above went to press I had the case of a little girl, aged two years, in hospital, who was brought from the country to have her disfigured state rectified, The wire sutures had been used: they failed in effecting union,—they cut their way out, and then the flaps of the divided lip became corrugated, and twisted in the most unsightly manner. On the 5th January I cut out the entire cicatrix, the thickened and everted parts, with my curved scissors, which was here peculiarly applicable, because sparing some of the red border of the cleft lip, at the same time securing in its curve much that was spoiled and not available for repair. I brought the divided parts together with three fine long needles and the twisted suture. The result was most satisfactory, the lip being perfectly united throughout, and its red border rendered even prominent, nearly natural.

employed after the manner illustrated, described and practised according to the rules laid down in my observations "On the operative measures necessary in the treatment of Hare-lip," and confirmed in the recital of this secondary series of cases, is far and away superior to any method devised both for security and efficiency.

Much of the disputation on this subject has arisen from men not describing exactly parallel cases. In the simple form of hare-lip, where there is scarcely any loss of substance, where the alveolar arch is perfect, the wound inflicted for its cure may be held together by the simplest method. Now, I ask the reader is it fair to argue from the result obtained in so trivial a case, that the same must follow in the terrible and complicated cases, which frequently come under the cognizance of the operating surgeon; such cases, for instance, as are reported in the foregoing pages. Oh! no: the long, fine steel needle, thrust through the flesh, and appearing far away from the site of injury, gives a steadiness, a fixity to the yielding parts detached, set loose for symmetrical relationship to each other, that never could be achieved by short and biting stitches—be the material thread or metal. Again, from the manner in which the force is applied equably over a large extent of surface, a retraction of the cut surfaces, when placed in contact, is merely prevented by the threads thrown lightly across; no sharp constraint is imposed, no strangulation of the included parts permitted, and so far as the metal suture is incapable from its constitution of irritating the parts wounded, in a similar sense the steel needle holds the charm.

In my former paper "On the operative measures in the treatment of Hare-lip," I have very carefully canvassed the question of the most suitable time for submitting the child to operation. Several circumstances, as I have pointed out, must be taken into consideration, and direct the surgeon[a]. Again,

[a] Since writing the above, the following most interesting case was under my care, and upon which I operated very recently, assisted by Drs. Bevan and Jennings. The patient, a little girl, had single fissure in the lip, cleft palate, and projecting maxilla. An operation had been performed when the child was ten months old, which signally failed, no union being effected; the deformity, if any thing, was said to be greater, and so the child grew up. When brought to me, the face was greatly distorted: the thumb could readily be admitted within the cleft; the right nostril was expanded, and its ala dragged outwards, flattened, and attached far back to the imperfect maxilla; and the edges of the cut lip were corrugated, twisted, and condensed. On the 2nd of February, assisted by the gentlemen already mentioned, I operated on the child, freeing extensively the nose and the cheeks far back, after the manner detailed in several of the above cases; this being done, with the bone scissors I cut away the external surface of the solid projection, so as to let the soft parts, when approximated, lie back, without being subjected to pressure or irritation from behind; the edges of



Mr. Butcher's instruments for partial section of the bones in hare lip.

Forster & Co. Lith. Dublin.

as to the time for removing the needles, an inquiry of equal moment, has been in the same communication thoughtfully considered. So that I shall now merely mention, in a tabular form, the ages at which the several complicated cases detailed in the present series of reports were operated upon, and, likewise, the periods after operation when the needles were taken away—the latter question being, in my mind, settled from the satisfactory results obtained.

Table *of Complicated Cases of Hare-lip.*

Cases.	Age when Operated on.	Period at which Needles removed.
Case 4.	14 days after birth.	96 hours after operation.
Case 5.	14 days after birth.	96 hours after operation.
Case 6.	34 days after birth.	96 hours after operation.
Case 7.	36 days after birth.	96 hours after operation.
Case 8.	1 yr., 6 mos., and 5 days after birth.	96 hours after operation.
Case 9.	2 months and 20 days after birth.	96 hours after operation.
Case 10.	3 years and 5 days after birth.	96 hours after operation.
Case 11.	3 months and 24 days after birth.	96 hours after operation.

Lastly, as relates to the administration of chloroform in these cases, in my former essay I most unhesitatingly condemned its adoption, and I see now no reason for altering this opinion. Here again I would caution the surgeon not to argue from trifling cases[a].

Art. XV.—*On Paralysis of the Bronchial Muscles.* By James F. Duncan, M.D. T.C.D., Fellow of the King and Queen's College of Physicians; Physician to the Adelaide and Simpson's Hospitals[b].

The morbid changes occurring in the muscular tissue of the pulmonary system do not appear to me to have attracted that attention from pathologists which has been so readily extended

the lip being carefully pared, they were brought together, and retained so by three fine needles and the twisted suture, each step of the operation being sedulously conducted according to the rules set forth in the above reports. On the fourth day, ninety-six hours after the operation, the needles were withdrawn, and I was happy to find that union was secured throughout. Support was afforded by adhesive straps; and after a fortnight the child was sent to the country, perfectly restored, and the parents most contented with the issue.

[a] Plate VI. Mr. Butcher's instruments for cutting through the projecting osseous pieces in complicated hare-lip, without dividing the soft parts and the vascular supply behind, previous to bending them back, after Gensoul's method; Fig. 1, for the anterior projecting piece; Figs. 2 and 3, for the right or left lateral portions.

[b] Read before the Association of the King and Queen's College of Physicians.

to every other structure in the body. It is quite true, that we have for a very long period been accustomed to recognise spastic contraction of these fibres as a frequent cause of some forms of dyspnœa; and various appropriate remedies have been resorted to for the relief of those diseases, suggested by the idea of their convulsive nature. But the opposite condition of impaired contractile power, if it has not been totally overlooked, has at least been greatly disregarded. No attempt, that I am aware of, has been made to ascertain the peculiar symptoms and signs arising from such a state, or to determine the treatment suitable for its removal or relief. And yet, judging from analogy, no reason can be assigned why such a condition as that of paralysis, or impaired vital energy, should not occasionally occur here, as well as in other muscles; or why, when such a condition does occur, its existence should not be discoverable by a careful observation of its attending phenomena.

Several circumstances naturally suggest themselves as serving to account for this omission. In the first place, the small size and obscure development of these muscles give us the idea that they are to be regarded rather as a rudimentary structure, preserving the analogy of form with the same parts in other animals, than as an apparatus designed for any special use in the economy of man. Very few practical physicians, I believe, look upon these muscles as performing any efficient part in healthy respiration; and hence they are not prepared to expect any material inconvenience to be produced as the result of their impaired action. In the second place, the fact that care has been taken, by the very organization of the parts, to prevent the respiratory process being materially interfered with by morbid changes in the vital action of these fibres, renders the occurrence of these changes, when they do take place, less obvious to the general observer. Not being voluntary muscles, neither the patient nor the physician is placed in a position to discover the loss of their contractile energy, while the manner in which they are associated with the elastic structures of the lungs is calculated to counteract the injurious effects that would be sure to follow, were collapse of the air-passages a necessary result of their paralysis. In the last place, morbid changes in the muscular structure generally are not of a nature to be recognised by microscopic examination. Changes in other tissues are too obvious to be overlooked. The mucous membrane may be congested, or thickened, or stripped of its epithelium. The serous membrane may lose its transparency, or be covered with an adventitious layer of lymph. The air-cells may be ruptured, enlarged, or otherwise altered. The parenchyma of the

lungs may be hepatized, infiltrated with purulent matter, or œdematous, all of which can be easily recognised by the senses. But the muscular structure seems to defy alike the scalpel of the anatomist and the lens of the microscopist. Even atrophy, a condition, with the occurrence of which in other muscles every pathologist is familiar, becomes, in the instance before us, an uncertain phenomenon, to be discovered with difficulty, because the normal structure itself is so delicate that it seems scarcely possible to decide whether the appearance, in any particular case under examination, is really a morbid condition or not.

I have said that analogy would lead us to expect that occasionally, at least, these fibres should exhibit the condition of diminished vital energy, or paralysis. To Dr. Stokes the profession is indebted for having, many years ago, enunciated a pathological law, as regards muscular structure, which has been universally recognised since as a well-established principle. The principle is this, that when muscular fibres have been long exposed to a continued irritation from the existence of inflammation in an adjacent structure, those fibres which at first are thrown into a state of unnatural contraction, by contact with the inflamed parts, at last become paralyzed from over-stimulation. It was in this way he explained the bulging out of the intercostal muscles, which is universally observed in the advanced stage of empyema. But this principle, which is universally admitted, when applied to muscular fibres in contact with serous membranes, is equally applicable to muscular fibres in contact with mucous membranes[a]. In fact, it has been so applied to explain appearances discovered in the dead bodies of persons who have died of ileus. Now, if this be true, and there seems no reason to doubt its accuracy, it follows as a matter of course, that long-continued inflammatory action in the bronchial mucous membrane ought frequently to impair, or even destroy altogether the contractility of the muscular fibres which lie in close contact with the under surface of the inflamed bronchi.

This idea was strongly impressed upon my mind by a case which I had recently under my care in the Adelaide Hospital, which presented some features of a peculiar character, that appeared to me to tally with what might be expected to follow

[a] Dr. Stokes has not omitted to notice this fact in his Treatise on Diseases of the Chest. He applies it to explain the production of dilatation of the bronchial tubes, and he also says it may be connected with certain forms of dyspnœa, but he has not given any rules for the recognition of the particular forms in which this paralytic condition exists.

from impaired energy of these fibres, and which derived immediate and obvious benefit from a plan of treatment adapted to such an hypothesis. Under the impression that this idea may be well founded, I venture to lay the particulars before the Association, in the hope that more extended observations may confirm the conclusions at which I have arrived, or, at all events, that the hints which I now throw out may lead to some practical improvements in the treatment of particular forms of chronic bronchitis.

Eliza Simpson, a married woman, forty years of age, the mother of nine children, was admitted into the Adelaide Hospital, December 12, 1859, labouring under a hard cough, with frothy and scanty expectoration, and suffering from intense dyspnœa. Her history was this : she was a laundress by occupation; twelve months previous to her admission, when in a state of perspiration, she had gone out of her washing-room into the open air, to gather in some clothes, when the weather was very severe, and snowing. In this way she got cold, which affected her breathing, and from which she had never recovered; within the last four or five weeks her condition had got very much worse, her sufferings being greatest at night; for several weeks she had been totally unable to lie down.

At the period of her admission she was a picture of suffering; she was worn out from want of rest; looked pale and emaciated; her lips were livid, and her respiration, though only 18 in a minute, was forcible and laboured. On examining the chest, it was of a rounded form, hyper-resonant on percussion, with a feeling of increased resistance under the pleximeter, and with loud, sonorous, and cooing râles, audible in every direction. There was no lateral or antero-posterior enlargement of the thorax during respiration: it moved, as a whole, as if the ribs and cartilages formed one firmly united and unalterable piece, and the only increase its capacity admitted of was by the elevation of its upper margin, and the depression of the diaphragm.

The manner in which the respiration was carried on sufficiently accounted for the pain and difficulty she felt at night. The involuntary muscles not being able, without assistance, to maintain the necessary expansion of the chest to carry on respiration, each act of respiration was, to some extent at least, an effort of volition; and as the condition of sleep implies the abeyance of sensation, she was obliged to remain awake, to keep herself alive. But there was one feature in her dyspnœa which could not fail to strike the most ordinary observer, and which appeared to me to give it a peculiar character, and that

was, the great disproportion which existed between the duration of inspiration, and that of expiration. In health, so far as I have been able to observe, the act of inspiration is really longer than that of expiration; at all events, I am satisfied that it does exceed in duration the period of time occupied by expiration. But in Simpson's case, this ratio was reversed, the duration of expiration being fully three times as long as that of inspiration. This could be seen by the eye, as well as felt by the hand, and heard by the stethoscope. I am well aware, that in chronic bronchitis, a prolonged expiratory murmur, attended by sonorous and sibilous râles, is one of the commonest and best known signs of the disease. But even in cases where the stethoscope reveals this sign, it is rare to see the difference manifested in a marked manner to the other senses, as it was in this instance.

How is this prolonged effort of expiration to be accounted for? I believe the usual way of explaining it is, by referring it to the diminished force with which the air is expelled from the lungs, as contrasted with that with which it enters; hence, when any mechanical impediments exist to the free exit of the air, owing to congestion of the mucous membrane, or the existence of the products of inflammation on its surface, it must take a longer time than usual for the accomplishment of the effort. But if this were true, how does it happen that such a phenomenon is never observed in acute bronchitis, where such congestion undoubtedly occurs, as well as in the chronic affection? Rejecting for this reason the explanation just given, I attribute the prolonged expiratory murmur to impaired action of the muscular fibres. So long as they retain their healthy vigour and contractility, weak as they are, they materially assist the act of expiration, by simultaneously diminishing the volume of the lungs; but when their vital power is impaired, by reason of the long-continued irritation to which proximity to an inflamed mucous membrane subjects them, they no longer assist, or assist but very feebly and imperfectly, the other agents, whose office it is to diminish the capacity of the chest.

This, then, is what I would consider as the distinctive sign of paralysis, more or less perfect, of the muscular fibres of the bronchial tubes.

But to return to our case. She was treated on her admission with stimulating expectorants, and turpentine stupes at night, but with very little relief. A variety of expectorants were tried in succession, but without advantage. On December 24 she was put upon a mixture containing nitric acid,

which agreed rather better with her than any she had previously used.

On the 26th the galvanic coil was used, and a current of electricity directed through the chest from the side of the neck to the pit of the stomach. This gave her no annoyance, but was productive of no benefit. On the 27th the report was:—"Looks a little better, but there is no material change; sleeps very little (all her sleep had to be taken in the sitting posture, or sleeping in bed with her head raised up); her breathing is very difficult." On that day she was ordered pills, containing half a grain of extract of nux vomica, and one grain of ipecacuanha, one to be taken three times a day, and her nitric acid mixture to be continued. The effect of this treatment was most surprising, and, I must confess, most unexpected. That night she was able to lie down and sleep all night; her breathing was much easier, and her expectoration free. She looked cheerful; and her appetite, which had been very deficient during the whole period of her illness, was improved. That was the first night, as she stated, that she had been able for seven weeks to lie down and sleep all night. Instead of broken snatches of rest in an uneasy posture, she was able, without inconvenience, to resume the natural incumbent posture, and to enjoy the refreshment that none can appreciate so well as those who have been long deprived of it. This treatment was continued with the happiest effects during the remainder of her stay in the hospital: with the exception that, on the 31st of December, the quantity of the extract of nux vomica was increased from half a grain to a grain for a dose: not because the former quantity had in a measure lost its effect, but under the idea that it might the sooner enable her to return to her employment. The effect of the pills, as she decribed them herself, was to relieve her breathing, promote expectoration, increase her appetite, and keep her bowels open. I certainly was not prepared to find nux vomica a promoter of sleep, believing, as I do, that it is in many of its properties an antagonist to medicines of the narcotic class. Yet so it was: the poor creature, who before was almost unable to close an eye, began to sleep in the day-time, to her own infinite relief. It is scarcely necessary to say, that I do not regard this result as contradictory in any measure to the physiological properties of nux vomica. It was the consequence, not of its direct, but of its indirect action. It did not narcotize the sensorium, but it stimulated the muscular apparatus of the pulmonary system, and, by so doing, removed a mechanical impediment to the

proper performance of the respiratory functions. On applying the stethoscope to the chest, it was found that the bronchitic râles had lost much of their intensity; they were shorter and looser, and the expiratory murmur, as contrasted with the inspiratory, was less prolonged. Corresponding to this change in the phenomena of auscultation, there was a corresponding change perceptible to the eye and hand in the relative duration of inspiration and expiration. The former, having lost somewhat of its voluntary character, was neither so forcible nor so short, whilst the latter, though still preternaturally longer, scarcely exceeded the former in duration. At the period of her discharge from the hospital, January 6, 1860, the two effects were very nearly equal in length of time.

Art. XVI.—*Case of Ascites, in which Nature effected a Cure by spontaneous Rupture of the Abdominal Parietes, at a point midway between the Umbilicus and Pubes; with Remarks on the Treatment of Ascites.* By Hugh Croskery, L.R.C.S.I.; Honorary Member of the Surgical Society of Ireland; Member of the Obstetrical Society; late Assistant-Surgeon R. N., &c.

I was summoned, a short time ago, to see a middle-aged negro, living on the summit of a hill in the heart of the mountains of Jamaica, in whose person nature was said to have effected, and skilfully too, an operation which the annals of medicine tell us she very rarely undertakes, and which it is now my good fortune, as well as my duty, to bring to the notice of the profession.

A case somewhat similar has been described by M. Delmas[a], in which nature had effected a cure by spontaneous rupture of a pouch which had presented itself at the umbilicus.

William Jamison, aged 50, had been suffering from ascites for some weeks. His abdomen had acquired a considerable size; the respiration was laboured and difficult; the feet, legs, thighs, and scrotum were almost bursting with œdema; he was restless, wakeful, and debilitated, and for the last few days a painful tumour, over the centre of the hypogastrium, added to his sufferings. On the centre of this hard and painful spot, a small slough appeared—the poor fellow lay awake nursing his tender burden—when, suddenly, he felt something give way, his bed was saturated—he was being tapped by nature! The

[a] Dict. de Med., vol. iv., p. 202.

slough had been dislodged, and the fluid was spinning from a small aperture, which now occupied its place! In less than an hour the poor man was completely relieved, and the fluid evacuated. Strange to say, nature had selected the very spot where the operation is performed by art! I saw this man a fortnight after the occurrence, and he told me that the fluid had continued to trickle from the wound for about twelve days, and that, by making pressure with his hands above and below the aperture, he had been able, at any time, to empty out the contents of the peritoneal cavity, without causing himself the slightest pain.

On the day of my visit, the aperture had closed, and there was considerable induration of the abdominal wall in its immediate neighbourhood. Some of the contents of the abdomen appeared also to have become agglutinated to its edges. The man's general health was improved, the œdema in his lower extremities had subsided, and there was no appearance of any re-accumulation of fluid in his abdomen. In short, the man was cured of his disease, and, from all that I can learn, continues so up to this day.

In Jamaica, the black and coloured people of the poorer class are particularly subject to ascites. I have now been three years in the country, and during that time I have had many cases under my care, and the result of the treatment that I have adopted has been very satisfactory. The disease is amenable to treatment, even in its advanced stages, as will be seen by the sequel. The intermittent and remittent fevers of the country, for the production of which this "isle of springs" is famous, are the most frequent causes of ascites, which runs generally a rapid course in constitutions enfeebled by disease, and the ingestion of watery, unnutritious food. In the fruit season, the mango and the orange form the chief diet of the negro, and what is there in these to strengthen an enfeebled frame? A few paroxysms of intermittent fever, or ague, are succeeded by a tumefied spleen; this, in its turn, pressing on some of the deeper vessels, impedes the return of blood from the vessels lining the intestinal canal, or perhaps, by its size, produces unusual irritation; and the natural result is that, in a flabby and relaxed frame, a rapid accumulation of fluid soon takes place.

In the mountain districts the surgeon is seldom sent for until the disease is in a very advanced stage, and the patients require immediate relief. The disease generally assumes the acute or subacute form, and, in the late stages, is seldom unac-

companied by considerable œdema of the private parts and lower extremities. In the negro it is seldom complicated with serious organic changes of any of the solid abdominal viscera, so that the only difficulty to contend against in the treatment is the restoration of the power of absorption, and the diminution of the function of exhalation, in systems relaxed by previous disease, and impoverished by a poor and unwholesome diet.

In the treatment of such cases, there is almost always a necessity for immediate tapping for reasons before alluded to, but, apart from this, I make it a rule to draw off the fluid, whether there is immediate necessity for its withdrawal or not, as I always find that, if the operation is deferred, time is lost, and the trocar has to be had recourse to in the end. After the withdrawal of the fluid, and consequently the pressure exerted by it, the exhaling glands, which before were impeded in their functions, are now easily acted on by remedies administered, and a decided effect is soon produced.

The treatment which I am in the habit of adopting in such cases is as follows:—

Take of elaterium, 1 grain; croton oil, 6 drops; blue pill; compound squill pill; powdered aloes and jalap, of each 30 grains: make into 24 pills, one to be taken morning and evening. Take of water of acetate of ammonia, 2 oz.; compound spirit of nitrous ether and juniper, of each 1½ oz.; tincture of hyoscyamus, 2 drachms; tincture of opium and digitalis, of each 1 drachm; nitrate of potash, 2 drachms; tartar emetic, 1 grain; camphor mixture sufficient to make 12 oz. Mix. A large spoonful to be taken every third hour.

This treatment, if persevered in,—pressure being kept up over the abdomen, at the same time, by means of a carefully applied swathe, and the system supported by nutritious food, and braced by tonics,—almost always succeeds with me in preventing a recurrence of the disease. In proof of this, I subjoin a few out of many successful cases.

Case I.—Wm. Anderson, quadroon, aged 40. Ascites with extensive anasarca. Had been, for some time previous, subject to repeated attacks of intermittent fever. The areolar tissue of the whole body was extensively infiltrated, and had become so within a few days; the respiration was painfully difficult, and relief by tapping was urgently required. The man was tapped on the 18th of October, 1857, and eleven imperial quarts of fluid taken away; the latter was highly albuminoid. Pressure over the abdomen was kept up for three weeks by means of a carefully applied bandage, and during that time the treatment, previously described, was adopted. The anasarca

soon subsided, and any fluid that may have re-accumulated was soon absorbed. The man made a good recovery, and was soon able to return to his trade, which was that of a coppersmith.

Case II.—Eliza Harris, a black woman, aged 29. Ascites. Had previously suffered from intermittent fever. Tapped on the 27th of January, 1858 ; nine quarts of highly albuminoid fluid drawn off. . The same treatment was adopted as in the preceding case, and with the same successful result.

Case III.—Mary Rodney, a black woman, aged 50. Ascites. Tapped on the 10th of February, 1859; nine quarts of fluid removed. Recovery after same treatment.

The short synopsis of the preceding cases is quite sufficient for all practical purposes, and it would be only a waste of time and space, either to give the minute details of each case, or to enumerate other successful ones. Ascites is so common a disease among the negroes, that one seldom thinks of noting down any case except something of unusual interest presents itself. It must not, however, be imagined that all cases are so easily managed as those enumerated in this communication. Cases sometimes present themselves, in which serious organic disease has been the cause of the mischief. I published in the February and August Numbers of the "Dublin Hospital Gazette," for 1858, an interesting case of ascites, the result of a chronically enlarged spleen, where, after two tappings, and after everything else that could be thought of had been tried, the disease was completely cured by mercury. The subject of the case referred to is now a strong, healthy boy, and although the spleen is still about four times its natural size, it exerts no baneful influence.

Art. XVII.—*Notes on Practical Midwifery; with Explanatory Cases.* By R. W. O'Donovan, L. K. & Q. C. P.

The state of parturition, before, during, and after labour, is one of great interest. Every new case presents some feature for study, and affords an object for reflection. Taking the existing "divisions" of labour as the simplest which can be devised, I will follow them in their order in the observations I am about to make, which, though they may not be new to many, yet, as being the result of careful bed-side noting, may not be entirely without interest.

It is seldom, except in the better classes of society, the country physician is called on in the early stage of labour to take charge of pregnant women. This is a serious evil, but one which

cannot, so far as I know, be entirely remedied; though I think it could be very much mitigated by the social influence of clergymen of every religious denomination. A great saving of human life would be the result, both infantile and adult. Too often have I been called in to witness the last moments of an unfortunate woman, allowed to "run down" by the exhausting influence of powerless labour, or to witness the death-throes consequent on a fatal hemorrhage, or ruptured uterus; and too often, indeed, to see the corpse of a fine, full-grown child "put by," without an effort being made towards its resuscitation. Many a time have I asked, Why have I not been sent for earlier? and received the invariable reply, The nurse said there was no danger, as it was only a simple case. For my own part, I do not consider any case of labour as *simple* or *natural* until all is well and happily over; but as one cannot by any amount of experience predetermine this result, I think the better plan, that which I invariably adopt, is to consider every case, no matter what natural features may attend it, as one which may present unforeseen difficulties and dangers. I think it better, then, for the practitioner to be armed at all points, prepared for every contingency. Thus I take with me to the country tartar emetic, tincture of opium, ergot of rye, chloroform, an enema apparatus, vagina syringe, and midwifery case. I know many able authorities object to the accoucheur carrying all those medicines and appliances with him; but, thus provided, I await the operations of nature, guiding and watching; and when I find her able to accomplish the desired result, never interfering; but, having won my patient's confidence, which can always be accomplished by the *suaviter in modo* and *fortiter in re* principle, I await patiently the moment when it becomes my duty to act. The sick woman is always fed by her attendants with the hope that she will "soon be better," and earnestly asks her doctor will she. I make it a rule to state the truth gently and affectionately, and give her all the information relative to her state, which she may *be able* to *comprehend;* if her labour is likely to prove tedious, it is better she should be aware of it; she will soon have more confidence, her anxiety will cease, and uterine action go on more healthfully. One of the many evils attending the early stage of labour with a woman who is in ignorant hands, and which is particularly injurious with primiparæ, is the habit of inducing severe forcing efforts before the "os uteri" is dilated, often before it is dilatable, and, in one instance which I recollect, a month before the woman's full period had arrived.

I was sent for to visit the wife of a policeman in her second

pregnancy. I found her in bed attended by three wise women, one sitting on the bed, pressing against the sick woman's knees; a second at the bed-side, holding her hands; and all encouraging her to "press down." The poor woman's face was flushed and distorted with her efforts. I made an examination, and found the vagina undilatable, cool, and moist, the os uteri high up, turned towards the sacrum, scarcely within reach of my finger, and natural.

I gave her a warm purgative draught and an opiate. She was safely confined in four weeks after my visit.

Having taken charge of my patient, and satisfied myself, by a careful examination, of her exact state, I give positive instructions that she should not be examined by the nurse. The less interference by a third party the better; so much mischief is done by ignorant midwives that I peremptorily forbid their investigation. The accoucheur should carefully look after every little detail, and *see* that every requisite is at hand when required—pins, scissors, ligatures, and binder; and care should be taken that the binder is thoroughly aired. Having seen to these matters, the medical attendant has little to do before the act of delivery but give the kind and patient word and gentle hand. When delivering my patient, which should be invariably done under the bed-clothes, except in cases of operative midwifery, I support the perineum with my *right* hand, *oiled*, and never lap a napkin *between* my *hand* and the *soft parts*. It is not easy to regulate the necessary amount of pressure or support without *feeling* what you are doing, when seeing is properly debarred from you; with my left hand I follow firmly, but gently, the contracting uterus. When the child's head is born, I quickly circle the neck with my finger to discover whether it be free of the funis; and, if so, I then gently raise the bed-clothes, and look at the child's face. If presenting a healthy aspect, I wait for pains to expel the body, supporting the child, and directing it forwards with my right hand; the left, as before, firmly following the womb. When the child is entirely born, I remove my left hand, and replace it by the nurse's, taking care she places it properly, edge on, the hollow of her hand firmly pressed against the "fundus uteri." I then tie the funis, keeping the child on its side; and, having separated it from the parent, deliver it to an assistant, with directions to keep it on its side or face. Great care should be taken about this, as I have seen children nearly smothered by keeping them lying on the back. This takes some four or five minutes. I then relieve the nurse, and inquire into the state and position of the placenta. If I find it in the vagina, which is likely to

be the case if the last part of the "second stage" has proceeded quickly and strongly, by telling double pains, I proceed to draw it gently away: if there be no "pain," a cough or two from my patient considerably assists its expulsion. If within the uterus, I place her lying on her back—the uterus in the middle line, and rub it steadily with my cold hand; if no pains come on, I press the uterus firmly, and, without causing my patient much pain, force the placenta away; and then, having removed all the wet articles, put on my binder, smooth, firm, and tight for the first two pins, the third moderately tight. Besides preventing "pendulous belly," not alone an ungainly, but a state of the abdomen which, in after pregnancies, may lead to dangerous results, it assists to keep the uterus in its contracted state (though this effect is doubted by some writers), and gives support to the back; thus affording great relief to the sick woman.

For a long time I have been in the habit of washing out the vagina with cold water before I put on the binder—a practice I would recommend as a prudent precaution against hemorrhage, besides having the effect of cooling the vagina, and removing coagula remaining in the vagina or about the mouth of the womb.

Very many able men recommend a considerable time to elapse before professional interference with the placenta—advice which, I confess, I cannot appreciate. For, what are the causes of retained placenta?—inertia of the uterus, irregular contraction of this viscus, and adhesion, partial or entire, to the walls of the uterus. I conceive it is not well to leave the placenta lying in the uterus after it has become *detached;* labour is not over until the placenta be expelled; nor, consequently, is your patient safe—in fact, no woman is safe until the womb contracts firmly, having got rid of all its contents. If the patient be not attacked with hemorrhage, internal or external, while the placenta and uterus remain in this relative state, it is rather a fortuitous accident; the contraction of the uterus is necessary to close the patent mouths of the utero-placental vessels; and, in my judgment, the sooner this desirable object is obtained, the better. Though by far the greater number of cases of retained placenta arise from this cause, in my own practice I never met with such a case: I do not permit such a state to exist.

It is true such cases may exist, and not be attended by fatal or dangerous consequences: for example—I was called to see Mrs. N., a respectable woman, who was attended by a midwife, an average specimen of her class. She had a quick la-

bour, and the child was born at 8 o'clock A. M. At 1 P. M. I saw her. I found the uterus large and flabby, the placenta retained within its cavity. My patient was much frightened and nervous at her state. Having placed her lying on her back, the uterus being in the median line, with both hands I firmly compressed the fundus and sides. At first large coagula came away, immediately followed by the after-birth. She was firmly bound, and did well; but though Mrs. N. recovered well, I yet consider the presence of the placenta in the light of a foreign body, which is likely to give rise or predispose to irregular contraction of the uterus. I cannot understand why the uterus should not be forced to expel the membranes, &c., immediately after the birth of the child: the patient would at least be saved hours of anxiety and fear.

I have never known any accident follow the course I advocate; nor can I really fancy any which might be likely to follow. If the placenta from within the uterus be withdrawn by the aid of *traction on the funis* without external pressure, I can readily understand the operation to be followed by hemorrhage; but when the expulsion is the result of forced uterine contraction, no such consequence is likely, or indeed possible, unless the uterus returns to its previous atonic state, which may occur, and should be guarded against by careful binding and padding: but this state is as liable to follow when the contents are naturally expelled. Every practical accoucheur knows the difficulty, always great, sometimes insurmountable, to be met in overcoming the contraction of the womb on the retained placenta. When this difficulty is so great as to resist gentle, steady, but determined efforts, I think good practice will advise the physician to desist from those efforts, and have recourse to the other resources of his art, and the powers of nature, to relieve his patient. Obstinate perseverance to overcome the contraction by mechanical means is likely to end fatally, whether the medical attendant succeeds in removing the placenta or not; and the more likely, if those efforts be assisted by the debilitating influence of tartar emetic.

In April, 1843, I attended a fatal case, which made an indelible impression on my mind: I will give it shortly from my case-book.

Mrs. Burns, the wife of a small farmer, residing seven miles from me, was attended by a countrywoman in her first confinement. I saw her eight hours after delivery: the placenta was retained; the funis torn away in the woman's efforts at extraction; perineum badly lacerated; coagula in vagina; os

uteri contracted so that I could barely introduce the point of my finger, which touched the placenta. I in vain endeavoured to introduce the point of a second finger: the os uteri was too rigid. I gave 30 minims of the acetated tincture of opium, and a full draught of castor-oil.

26th. Mrs. B. slept well during the night: the bowels have not been freed; pulse 100, weak; complains of great pain from the laceration. A gentle examination discovered the "os" in the same rigid state: ordered castor-oil, to be followed by a warm-water enema. Visited her again in six hours, accompanied by Surgeon Reynolds; found her very much sunk; pulse 130; anxious countenance. To get carbonate of ammonia, with an opiate at night (40 minims of acetate of tincture of opium). Acetate of lead lotions to perineum.

27th. She spent a good night; bowels freely moved; no pain in abdomen; suckled her infant; lochia established; os uteri in the same state. During my visit, another medical gentleman arrived, who was requested by a lady (the wife of the rector), from his great experience and long standing, to visit her. He felt confident he could succeed in overcoming the contraction, despite all difficulties, and, unfortunately, persisted in his efforts for one hour and a half, but without success. During this period he administered 280 drops of laudanum, and seven and a half grains of tartar emetic. She suffered frightful agony—diarrhœa, tormina, with severe abdominal pain, set in before we left her. She died early on the next day.

I have little doubt, had this woman been treated on the principle I advocate, by firm external pressure immediately after the birth of the child, the placenta would have been removed before the uterus had time to contract.

The retention of the placenta is not necessarily fatal, though sufficiently often so, to make it an alarming complication. The following interesting case shows how much may be borne by a sick woman, and how much one is justified in clinging to hope: it has also its moral lesson.

On the 6th of June, 1856, Mrs. ——, a farmer's wife, three weeks married, consulted me for an abdominal tumour, which she has felt increasing in size for some time: says she menstruated since her marriage. The tumour presented the external appearance of an impregnated uterus, from its position and shape: the stethoscope detected a distinct "bruit." My conviction of her pregnancy was strong; but as she assured me she never had carnal connexion previous to her marriage, I requested she would visit me again in a month, and declined ordering her any medicine. On her second

visit, the tumour was much larger; the breasts well developed; the nipples prominent, and secreting a serous fluid. The stethoscope now revealed the fœtal circulation; she, however, persisted in her former story; and I lost sight of her till the 22nd of November, when I was called on to visit her. I was told she had been knocked down by a calf on the first of the month; that labour set in immediately, and that she was *prematurely* confined; that the fœtus was very small, and still-born; and finally, that the after-birth was expelled with the child. She had been immediately after attended by a physician, who applied leeches to the tumour, &c.; but had no hope of her recovery. I found her labouring under well-marked hectic; her body emaciated to an extreme degree; constant vomiting; profuse perspiration; great irritability of bladder; diarrhœa; tongue moist, red, and clean; pulse 160. The tumour filled the entire space, from the pubes to the umbilicus; the integument presented the usual white striæ.

A vaginal examination discovered the "os uteri" dilated to the size of a half-crown piece. The foreign body could be distinctly felt through the opening; a very foul discharge flowed from the vagina. As she had only voided a few drops of urine during the night, I passed a catheter, and drew off about four or five drachms of turbid water. To my inquiries about the placenta, I received the most positive assurance that "all" had come away, and that it was buried in the manure heap.

My chief object being to support her strength, she was ordered wine, chicken-broth, &c.; an occasional mild dose of castor-oil; an opiate at night; a weak chloride of lime vaginal injection; and iodine ointment to be rubbed over the surface of the tumour twice a day. I visited her occasionally, and, to my surprise, she gradually improved in appearance and strength, while the swelling gradually decreased in bulk, and became softer; the vaginal discharge increasing in quantity, and, if possible, inoffensiveness. This treatment was continued to the 15th of December, when, on examining through the vagina, I found the foreign body protruding through the "os." With care and patience I succeeded in drawing it away, and found the placenta partially decomposed, and insufferably offensive, after being detained forty-five days. She was ordered quinia and cod-liver oil; and, after a tedious convalescence, recovered perfectly. She has since borne a second child; and the placenta was expelled immediately after the birth.

I will add another interesting case of retained placenta followed by hemorrhage.

Mrs. L., mother of several children, was confined at

8 o'clock A. M., September 22, 1859: she was attended by a country midwife. I saw her in nine hours after the birth of the child. On examination I discovered hour-glass contraction of the uterus. Guided by the funis, I found the placenta very high up, elongated, and tightly grasped by the circular muscular fibres. With great difficulty I passed my hand through the constriction, and above the placenta. The irritation caused by my hand produced powerful "bearing-down pains," which forcibly expelled my hand, with the placenta: the uterus contracted well. My hand was so weakened by the pressure of the uterus, I was unable to fix on the binder, and was obliged to intrust it to the nurse. In a few minutes I observed my patient looking pale and faint; and on putting my hand over the abdomen, I found the uterus distended, and filled with coagula: there was also considerable external hemorrhage. Cold cloths and pressure, drachm doses of tincture of opium, with cold water injected into the vagina, suppressed the hemorrhage. I have no doubt, in this case, had the uterus been firmly followed down by a judicious hand during the act of delivery, this irregular contraction would have been prevented, and the after-birth naturally expelled.

In tedious labours, when the head has been for a long time protruding and retiring, a state very common when the fœtal head enters the pelvis in the "fourth position," and which I have found in twin-cases where the membranes are double, the child will often be in a state of asphyxia, its ultimate death more than doubtful; and, to add to the embarrassment, the expulsive power of the uterus almost always ceases for a considerable time after the expulsion of the head. It becomes a matter of great importance to get the infant to breathe during the interval. To accomplish this object, I put the little finger of my left hand into the child's mouth, and irritate the fauces; while, with my right, I dash some cold water on the child's head: it is almost invariably followed by a gasp, more or less prolonged. The shock is conducted through the system; and a powerful expulsive effort is the result. I believe I have saved many children in this manner; and I think I am not transgressing the limits I have laid down for myself if I draw the attention of the profession to an important moral point at this stage of my remarks. There is no doubt, very many children die asphyxiated, in whom life really exists at the moment the head is ushered into the world; but, so exhausted is the vitality, that, if there be much delay in the entire progress of delivery (and every experienced accoucheur knows there often is), the vital spark ceases to exist before the

fœtus is entirely separated from the mother. In all those cases of *extreme doubt*, I baptize the child *before* its perfect birth, when the danger of death is imminent. Looking on it as a matter of the most sacred importance, I never hesitate in carrying out what I consider a moral duty.

Pendulous abdomen is sometimes a very dangerous complication, even in natural labour; and I am inclined to think it contributes not a little to "ruptured uterus." I draw a distinction between this state of the abdomen and the "oblique" position of the uterus. The following case will exemplify.

A farmer's wife, aged 40, mother of seven children, was attacked with labour-pains at 8 o'clock A. M.; the pains were quick (she was never more than three or four hours ill); and she expected to be well with her usual good fortune. I saw her at 6 o'clock P. M. On examination, I found the os uteri fully dilated, and the membranes ruptured; but the child was high up, and the presenting portion anterior to the transverse diameter of the pelvis. While examining her, a prolonged pain came on, which, however, produced no influence on the child. I found the abdomen lying on the bed, with its contents as much out of the axis of the upper outlet of the pelvis as it was possible. The head of the child could be distinctly felt externally, resting against the pubes; so that no amount of uterine pain or action could forward the delivery. By getting her to lie on her back, and placing my arm round the abdomen, and thus keeping it in a natural position, the head rapidly descended, and delivery was perfected in four pains, which were almost continuous. I do not think this woman could have existed much longer without the uterus giving way, as it was physically impossible that the child could stir from its abnormal position.

I attended Mrs. L., a farmer's wife, in her fourth labour, September 28, 1859. She was fourteen hours ill before I saw her. The os uteri was fully dilated; membranes unruptured, fœtal head resting on the pubes; abdomen lying on the bed when she turned on her side; labour pains strong and double. Pressing up the head with my right hand, I drew the abdomen forward with my left, at the same time turning her on her back. I ruptured the membranes, and the child was safely born in half an hour. In this case the child was floating in the "waters." No progress was made in the descent of the fœtus; nor, in all probability, would there have been, without professional assistance.

I have met many such cases, when, to my surprise, the structure of the uterus resisted constant, powerful, but abortive

efforts to expel its contents. The following case is interesting from the extreme obliquity of the uterus, and the consequent prolongation of labour.

September, 1858. I attended for the Dispensary doctor a labourer's wife, aged 25, in her first pregnancy; ninety hours ill before I saw her; os uteri fully dilated; fœtal head at brim of pelvis; anterior fontanelle easily distinguished at the pubes. An external examination showed the outline of the gravid uterus extending from the left side downwards and backwards. A line drawn from the symphysis pubis to the ensiform cartilage would bisect the uterus at the umbilicus; the remainder of the abdomen was filled with the intestines distended with flatus. She was a very ignorant woman, and could give no satisfactory history of herself, except that she had not received any hurt, and that, during the later months of her pregnancy, she could not lie on either side—on the left from extreme pain, and on the right from a dragging sensation. Her pains were severe, but short: she got ergot of rye, which improved their character; and in six hours I was enabled to deliver her with the forceps. The face was turned to the pubes, and was much congested and swollen: the child lived forty minutes. The mother's convalescence was slow, but she ultimately recovered well.

I shall bring this paper to a conclusion by a few remarks on the administration of the ergot of rye. I cannot say I have ever found it injurious to fœtal life; in which assertion I know I differ from such great names as Beatty, M'Clintock, Hardy, and others; but as all my statements in this article are entirely the result of my own experience, untrammelled or unprejudiced by authority, no matter how eminent, the opinion must stand on its own merits.

In all cases of tedious "labour," I have been in the habit of giving ergot of rye, where the os uteri was dilated, or *dilatable*, without progress being commensurate with the pains; and where no positive state existed to prohibit its use. I have sometimes found it insufficient for the motive intended; sometimes, but very seldom, inert. The object in giving the *Secale cornutum* is manifestly to increase the expulsive power of the uterus, to enable it to overcome a resistance, whether the resistance arise from disproportion between the fœtal head and the pelvis (supposing always the fœtal head to be viable), or from simple inertia of function. I do not take into consideration its administration for the production of premature labour.

It is not uncommon to see cases where the second stage of

labour is prolonged over ten or twelve hours (when ergot of rye has not been given), either from great ossification of the bones of the head, from a narrow, but viable pelvis, when the occiput presents, or when the face is turned to the pubes. In those cases there is great risk of the child's death; and too frequently death is the result. If the progress of the gradual sinking of the child is observed, the circulation will be found to become more feeble, to intermit, and finally cease. I have often noticed these facts; and will record the following case from my note-book, as it afforded me an interesting opportunity of hourly watching the gradual wearing out of fœtal life.

July 20, 1857. I attended Catherine Murphy, aged 35, residing seven miles from me, wife of a labourer, in her second labour: her first was a crotchet case. I found she had been suffering all the previous night from pain in her back; vagina soft; mucus abundant; but no "show" or token of "dilatation." Os uteri high up, hard, and apparently indurated, particularly its anterior lip. She was ordered an anodyne and simple enema.

21st. Notwithstanding the enema and anodyne draught, she continued in the same suffering state. Ordered a full dose of tincture of opium, to be repeated in six hours if necessary.

22nd. Got her draughts: pains continue unabated; had a "show" this morning; but there is no perceptible uterine dilatation. Ordered a mixture with tartar emetic and tincture of opium.

23rd, morning. Uterus dilated about the size of a shilling; membranes ruptured; presentation more distinct; pulse 78; skin soft; had some sleep during the night. Trusting that labour would now progress without interruption, I determined to remain with her. Evening: very little increased dilatation, though the pains are incessant. The tartar emetic and opium mixture is continued.

24th—morning. Os uteri in much the same state; posterior lip soft and dilatable; anterior, hard and rugged. Slept very little.

6 o'clock P. M. Os uteri dilated to about the size of half-a-crown; patient much exhausted; pulse 100. She has vomited frequently during the later portions of the day; has retention of urine, requiring the use of the catheter. Had a consultation with Dr. Hunter, of Lisnaskea; but declined perforating the head as the fœtus was alive, and the mother had yet considerable strength.

7 P. M. Mother weaker: fœtal circulation slower, but distinctly heard.

8 o'clock. Fœtal circulation weaker; and occasionally the sound is entirely lost.

9 o'clock. Fœtal circulation almost inaudible, but yet sufficiently distinct to evidence life.

10 o'clock. Fœtal circulation no longer perceptible; mother exceedingly anxious; suffering great pain; frequent sick stomach; restless and low-spirited. I determined to operate on Dr. Hunter's arrival, which did not take place until 1 o'clock A. M. At 1½ o'clock I introduced the index and second finger of my left hand within the os uteri, which was barely sufficiently dilated to permit me. With the crotchet thus guided, I penetrated the cranium, and completed the operation at 5½ o'clock A. M. My patient ultimately recovered well, and has since given birth to a living child.

This case, which might be followed by many others from my case-books, afforded me the opportunity of closely observing the gradual decease of the infant *in utero;* and all the phenomena discovered by the stethoscope were identical with those which are usually described as the result of poisoning with the ergot of rye; but, on the other hand, I have given so much as two drachms of the powdered ergot in infusion, and delivered my patient of a living child. My experience, then, of the administration of the *Secale cornutum* is confirmatory of its beneficial influence.

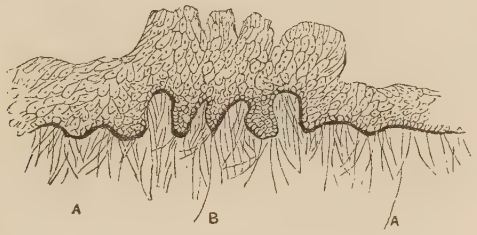
Art. XVIII.—*On the Degeneration of Warts.* By Maurice H. Collis, M. B., M. R. I. A.; F. R. C. S. I.; Surgeon to the Meath Hospital, &c.

In this paper I purpose to trace the steps by which some of the simple forms of hypertrophy become converted into active agents of destruction. We are all familiar with the fact that warts and moles may become suddenly active in growth. Whether originally congenital or not, they will remain for years unaltered, merely growing with the growth of the body, and exercising no influence on the surrounding parts; and then, after a blow or other irritation, they will spring into activity fraught with mischief. Not only do they increase in size, but they soften and appear to ulcerate: their surface becomes covered with the cheesy remains of the epidermic masses, mixed with a sero-sanious fluid; they readily bleed on being roughly handled; while their centres seem ulcerated, the papillæ round the margins are enlarged in every direction. The bases of these papillæ are easily separated; and cracks or

fissures are thus readily produced. These fissures act as centres of irritation, and an inflammatory ring surrounds the wart. In a short time some of the neighbouring healthy papillæ become hypertrophied. By degrees the disease extends, with more or less irregularity, round its original seat; and, while it principally confines itself to the skin, the deeper parts become more or less infiltrated and separated by masses of the epithelial cells, which take a downward direction between the separated papillæ. We have here three distinct stages or conditions of the wart—1st. A simple hypertrophy. 2nd. Hypertrophy with ulceration. 3rd. Hypertrophy with infiltration. To these I shall revert presently.

Cutaneous nævi, in a like manner, may seem to acquire a malignant activity; without any great increase of their vascular elements, their cutaneous coverings become thickened and warty, and by degrees they lose their primary aspect of vascular tumour in the new development. Of this I have seen instances on the foot, the back, the pudenda, and other regions. Those warts, or nævi, which are of a dark hue from pigment-cells, seem specially liable to these degenerations. Simple epulis may also, in like manner, lose its primary character of a wart of fibro-mucous integument, and become a destructive growth, eating into and destroying both gum and bone. A fissure in the lip will acquire a hard and horny covering; or one in the tongue will get a thickened edge, and, by degrees, an epithelioma is produced, with greater or less power to destroy neighbouring parts; or, from the lining membrane of the uterus, or bladder, or of an ulcerated or ruptured encysted tumour, a fungous-looking mass of cauliflower growth protrudes, bleeding and sensitive, and, as we all know, of a sufficiently malignant nature. Now all these changes are set down as instances of a cancerous degeneration; and many are satisfied with the term, as if it in any way explained the phenomenon. And yet the steps of these degenerations are plain, as are also the laws by which they are regulated, if we only have a little patience in observing and comparing. In the healthy integument the dermis is thrown into wavy papillæ, covered with a layer of epidermis; the latter follows the indentations of the papillæ, though the hollows and eminences are less deeply marked on its surface. It is composed of successive layers of cells secreted by the dermis. These cells, when first secreted, are very small, mere nuclei; as each is pushed forward by a freshly-secreted cell, it gradually enlarges by endosmosis; and by the time it arrives about two-thirds of the way towards the surface, it arrives at its full development. It now begins to be subject to atmospheric

influences, ceases to absorb fluid from the blood-vessels of the dermis, and, dying, becomes flattened at last into a scale. As it takes more room in this shape, it tilts a little obliquely on its edge. Finally it is removed by surface-friction. In this way a constant succession of fresh cells is kept up, to be as constantly destroyed when they reach the surface, and have done their work. The line which a series of cells takes in their progress from the point of secretion to the point of destruction is influenced by two forces; and by the ordinary mechanical law, it lies in the direction of the resultant of these two forces. The forces are the secreting force of the dermis, and the desiccating power of the atmosphere. The resultant of these two forces may be taken, for all practical purposes, to be a line at right angles with the surface of the papillæ in healthy integument[a]. Owing to the oblique setting of the papillæ, there is practically no crowding of the cells upon one another, and no distortion of the lines of cells; all pass regularly on from the points where they first spring into life, to the surface, where they perish. We must acknowledge their course to be guided by laws sufficiently plain and simple. Now in the simple wart we have a few cutaneous papillæ, enlarged in length and breadth, supplied with nutrient material, and secreting epidermic cells with great activity. These come forward to the surface, dry up, and are rubbed off by friction as on the rest of



No. 1[b].

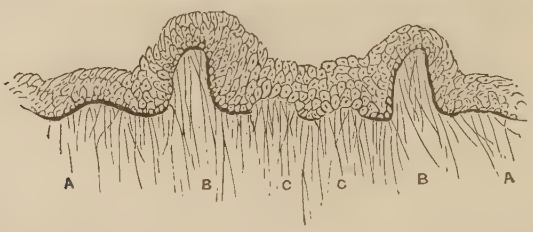
the skin. This is the stage of *simple hypertrophy*, which I have mentioned above. This condition may continue permanently; it may disappear, or it may be exchanged at any time for the

[a] The line of progression is exactly at right angles only at the apex of the papillæ, and at the centre of the sulcus between two papillæ; in other parts it inclines slightly towards the apex of the papillæ.

[b] In the wood-cut, No. 1, A, A, represent healthy papillæ, covered with layers of epidermic cells; B represents the hypertrophied papillæ, with the cells somewhat crowded and compressed, and dry and flat towards the apex.

second stage of hypertrophy with ulceration. To the consideration of this change we shall now pass on.

Ulceration, or molecular death without repair, is brought about in any tissue of the body, either by inflammatory action or by continued pressure. In the one case, a mechanical, in the other a vital cause produces the result. In the one case there is no room for new material to be laid down; in the other, inflammation has destroyed the material which ought to be laid down. The ulceration in connexion with the degeneration of warts is of the mechanical type at first, and is due to the pressure of masses of epithelial cells upon the surface of neighbouring papillæ. These cells accumulate more rapidly than surface-friction can remove them; they must find room; so they first push on, and crowd one another. Their regular passage to the surface is interfered with; they are turned out of their straight course towards the surface; hence they do not come under atmospheric influence; they remain moist, and grow to their full size while still deep. The cells which belong to one papilla will accumulate in this way until it and they take the shape of a button-mushroom. All the papillæ may have this tendency; but as it is evident that all will not have room to do so, we find that those in the centre of the wart, being pressed on from all sides, give up the struggle: in fact, they are overtopped by the mushroom-tops of those round them, and are mechanically prevented from forming new cells. The pressure increases, and the substance of the papilla itself recedes before it, and is absorbed, or, in reality, dies, and is not renewed. Thus, by the mechanical pressure of masses of cells growing



No. 2[a].

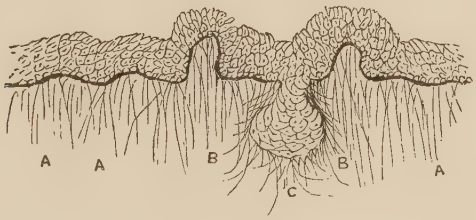
from hypertrophied papillæ, the second stage of warty growths is initiated.

This condition can be tracked by the naked eye, or, at any

[a] A, represents healthy papillæ; B, hypertrophied papillæ; C, the remains of papillæ compressed and absorbed by the accumulating masses of cells which spring from the neighbouring papillæ.

rate, with the aid of a pocket-lens, in a section of any cutaneous cancroid. It is, in fact, the ordinary condition of all epithelial ulcers, as far as their surface is considered. The floor of such ulcers is composed of vascular papillæ, often a line in diameter, but stunted in height; while all those that surround the margin of the ulcer are longer, somewhat thinner, and topped with exuberant masses of epithelial cells. If the ulcer is extensive, we shall find several islands of this latter class of papillæ scattered over the surface; and, wherever they spring up, they will be found to press upon, and ulcerate, and flatten down their neighbours. These appearances are common to all epithelial ulcers, however or wherever originating; but they are best marked and most easily studied on those of the cutaneous surface. They constitute what I have ventured to term the second stage in the degeneration of warts and kindred growths —namely, hypertrophy with ulceration.

If we continue our dissection of such ulcers, we shall find that it is easy to separate the papillæ from one another at their bases; and that such separation may be carried to the depth of a line or two before it gives rise to bleeding. This prepares us to comprehend the third stage in the degeneration of the wart, viz., *hypertrophy with infiltration*. In this third and final stage, we have enlarged papillæ, topped with masses of cells, which not only press on and ulcerate the papillæ beside them,



No. 3[a].

but also push the new-formed cells downwards between them. I have found this infiltrating process to originate in two ways: the first and simpler is where a papilla, ever continuing to secrete cells, pushes them on into a crevice between two papillæ; turning downwards, the cells push on until they split the papillæ from one another, and, into the angle thus made they are

[a] A again represents healthy papillæ; B, those which are hypertrophied; and C is a small group of cells which have forced their way into the interstices of the fibres of the integument, and are beginning the work of infiltration.

pushed on by the pressure of those behind them; and so they continue advancing between the fibres of the dermis, making way by thrusting them aside until they get into the subcutaneous tissue. In such cases, the infiltrating mass is distinct and separable from the parts between which it has insinuated itself. The constant pressure on the cells which form its front or advancing layer, flattens them into a sort of false cyst of extreme delicacy. This false cyst is an object of extreme beauty under the microscope, composed of delicate epithelial scales, arranged in an imbricated manner with extreme regularity, like scales on a fish's back. A section of the round masses of epithelioma which are found between the muscles in cancroid of the lip will show what I mean; or it may be observed better where masses of epithelioma are lying upon bone, if such a specimen can be had. The second way in which infiltration occurs is more frequently found in epithelioma of the tongue and other mucous surfaces. It is analogous to the infiltrating processes of cancer. The epithelial cell pushes down between the separated papillæ, and, arriving there, it irritates their vessels, and produces an interstitial effusion of lymph. In this lymph, nuclei and cells are formed similar to the epithelial cell, and become a fresh centre of irritation; and the disease progresses rapidly by fresh development of cells in the plastic effusion which fills the interstices of the fibrous or muscular tissues attacked.

I have said that epithelioma of mucous surfaces in general progresses after this infiltrating fashion; there is a reason for its doing so in the greater vitality of the epithelial cells in the normal state of these parts. They are, from first to last, scarcely influenced by the atmosphere, and run through their whole progress in a state of moisture, absorbing fluid from the blood-vessels, and, finally, bursting when their walls are no longer capable of distention. In this way, we account for their more active vitality and more rapid growth in health, and for their greater power of destruction when disease sets in. There is another reason in the structure of the parts invaded. If any one carefully examines an epithelioma on the border-ground between skin and mucous membrane, they will see that destruction has progressed much more rapidly from the mucous portion.

I had a case where the ulcerative process had eaten through the thickness of the cheek, and the masses of epithelioma were beginning to project through the skin; while a contemporaneous ulceration of the true skin had barely made any impression. Now, here it was plain that this discrepancy of result would

only be accounted for by local causes. I have given one above in the nature of the covering cells; the other is the difference in the tegumentary membrane itself. The softness and vascularity of the mucous membrane, the delicacy of its fibres, the ease with which they are split, are sufficient to account for its greater susceptibility to ulcerative and infiltrating processes; so that when once the disease is set up by any irritating cause, it is no wonder if it progress rapidly. As a corroboration of this view, I may mention that infiltration is always rapid in the interstices of muscular fibre; that it is still more rapid in the interstices of adipo-cellular tissue; that it is always checked by fascia in proportion to its density; and though, after a time, it overcomes it, and causes its absorption, it seldom infiltrates either fascia or tendon. Further, it is, as might be supposed, held at bay by bone, until, by the pressure of the accumulating masses, the latter is eaten away, as would be done by an aneurism; and, finally, I have seen it completely prevented from progressing by the dense contractile tissue of the cicatrix of a burn.

It will be seen that I have apparently departed from the consideration of the degeneration of warts, and that these latter remarks apply generally to epithelial disease, whether springing from warty growths or not. This is true, but it is in part unavoidable; for the second and third stages are alike, no matter in what form the disease commences, whether as wart or epulis, fissure of the lip, or fungating excrescence. The commencement, too, of the degeneration of all these and of nævi is referable to one formula—hypertrophy of the tegumentary papillæ, with excessive formation of cuticle or epithelium, followed by ulceration of the papillæ from pressure of the superabundant cells[a]. How often have we seen a hard and horny line of closely adherent cuticle along the margin of the lip, fissured, perhaps, in one or two points, and so slow to progress, that surgical interference may not be called for till years have passed. And yet, if a portion of this hard cuticle is removed, or falls off at the fissured part as a scab, we are sure

[a] Mr. Paget, in his chapter on "Epithelial Cancer," gives three cases in which he conceives the disease to have commenced as a subtegumentary infiltration. I have never met such cases, and I do not like to hazard an explanation of them. Still, I can conceive the disease to arise in the hypertrophy of the lining membrane of a follicle or gland-duct: such occurrence must, however, be rare. Even in Mr. Paget's cases, there was an ulcer in one, and a fissure in another, which must make it at least doubtful whether they originated as sub-mucous infiltrations; and the remaining case must be taken to be so exceptional, that I will be pardoned if I do not consider it a sufficient ground to induce me to alter my views of the origin of epithelioma.

to find the surface of the dermis beneath, formed of enlarged and ulcerated papillæ. And so a wart may remain for years, scarcely, if at all, altered; and suddenly, after a blow, rapid degeneration begins; or a mole, which has been level, or nearly so, with the surrounding skin, begins to expand, and, after a time, to ulcerate; or a nævus begins to lose its great predominance of vascular tissue by increasing hypertrophy of its integument; in all these cases there is a tendency to change into the state of wart before the ulcerative stage sets in.

Of secondary deposits in glands by absorption of the morbid fluid generated by epithelial infiltration, I shall now say nothing, further than that it closely resembles encephaloid cancer, both in its physical characters and progress. There are differences, but they are of little known value, as yet, to the practical surgeon; and I shall not now insist on them. These forms of disease are much more slow to poison the lymphatic system than genuine cancers are; they acquire a much greater local development before they do so. But, when glandular enlargements arise, they generally run a rapid and most malignant course.

Epithelial disease spares no locality. As it is in its origin a simple hypertrophy, there is no portion either of skin or mucous membrane which is absolutely secure from its attack. We find, indeed, certain parts more or less liable to direct injury, or to those other irritating causes which produce the disease; sometimes these causes are acknowledged, while in other cases they are ignored or denied. But I think it is a sufficient answer in such cases to say that nature does not multiply processes to produce the same effect. If, then, we find, in even one case, that epithelial disease arises clearly by an intelligible process from hypertrophy of the cutaneous papillæ, I think it is not unphilosophical to conclude that, in all cases of epithelioma, the origin is similarly referable to such hypertrophy; and if not in one case only, nor in one class of cases such origin is proved, it goes very far indeed to make the presumption a certainty. Now it is allowed on all hands that warts, &c., degenerate into epithelioma; it is also believed that a constant local irritation, or a sudden violence, will set up this change. The successive steps of the change are not difficult to trace until the local disease acquires its maximum; and even the mode in which distant parts are poisoned is capable of ready explanation. If to this chain of evidence we add another deduced from the progress of a fissured lip with thickened edges, its ultimate condition of a corroding and infiltrating cancroid, we have an almost irrefragable proof of the oneness of the dis-

ease, from whatever form of hypertrophied papilla it arises. If, again, we find that in those who are the subjects of congenitally tight prepuce, epithelioma is liable to occur, can we suppose it to arise in any other way than by the degeneration of warty papillæ; and if we find such a condition of parts a frequent cause of warts, is not our supposition a certainty? In all these, and many other facts, we see proofs of the statement I laid down broadly—viz., that epithelioma arises always from hypertrophied papillæ. In some cases, as in common warts, the hypertrophy may go no farther; while, in others, ulceration and infiltration are added.

To the surgery of the subject I have little to add, unless to enter a strong protest against the use of the knife in the case of such simple hypertrophies as are not increasing in size. The best means to remove common warts is to cover them with alkaline poultices; and when the hardened cuticle is softened, to remove it by gentle friction; caustic or pressure will then reduce the papillæ to their natural dimensions. I would not meddle with moles unless they began to grow; then I would cut them freely out, or remove them with the écraseur.

Nævi, in like manner, so seldom degenerate, that one is not often called on to interfere for this cause. Of the mode of treating vascular nævi, this is not the time to speak. Epulis I always remove, and cauterize the pedicle or base from which it sprang. Its mucous connexions render it tenfold more dangerous than its congener on the skin. Once the ulcerative stage has set in in any form of epithelioma, the knife should be the sole resort; it should be carefully used, so as only to remove what is really diseased.

Mr. Paget very justly remarks on the slight depth to which epithelial disease extends compared with its superficial extent and exuberant outgrowth. I would add to this that its extent into the tissues in a lateral direction is much less than its size leads us to expect. The masses of hypertrophied tissue and epithelium push the sound tissues aside much more than appears at first sight; and the real inroad upon the skin is as trifling as the downward progress of the disease. Hence, in practice, while we remove a large piece (it may appear to be even a third or half of the lip), yet, when the parts are drawn together, there is a very fair lip left.

This hypertrophic tendency of epithelioma is, to my mind, so well marked, in opposition to the equally well-marked infiltrating tendency of cancer, that, taken with the mode of origin (superficial in the one, and deep in the other), and their histologic differences, I cannot consent to look upon them as

other than essentially different diseases. Cancer is rarely anything but an infiltrating growth; epithelioma only so in its later stages; and, even then, much of the destruction it causes is due rather to pressure than irritation. In this, its extreme stage, free removal is also called for, the condition of the neighbouring glands being first ascertained.

Art. XIX.—*Case of Double Monster.* By S. Henry Hobart, A.B., M.B. T.C.D., &c., Assistant Surgeon, North Infirmary, Cork[a].

On September 23, 1860, I was called on to see Mary Barber, then in labour of her first child. On examination I found two feet protruding from the vulva, one being rather lower down than the other. This was about 1 o'clock P.M. The membranes, as far as I could ascertain, had ruptured about 8 o'clock A.M., and the feet had been protruding about two hours previous to my visit. Very little uterine action was going on. I attempted to draw down the foot which had least descended, but found it unyielding, and observed that it was turned nearly at right angles to the other; and the idea suggested itself that they might be the feet of different children; but the fact of their being right and left rendered this less probable. A second attempt to draw down the upper foot having failed, I passed the index and middle finger into the vagina, and could just reach what proved to be a third foot; and, on then following the line of the lowest leg, the breech of this child could be felt, its second leg being flexed on the abdomen. Not being able to bring down this child by moderate traction on the leg which was protruded, I returned home for a blunt hook, and, at the same time, availed myself of the assistance of my friend, Dr. Bernard.

On applying the hook over the groin of the first child, or that which had advanced most, we divided the force, Dr. Bernard drawing on the protruding leg, while I assisted with the hook, at the same time endeavouring to push up the feet of the second child. In this way considerable advance was made, without exercising undue pressure on one part; and by the time the breech of the first child had descended into the hollow of the sacrum, the feet of the second had gone up completely above the brim of the pelvis. Further advance now became more difficult, the force required steadily increasing as

[a] Read before the Cork Medical and Surgical Society.

the child advanced more and more. At length the breech was brought down beyond the external parts, and the second leg liberated from the vagina; beyond this, however, no force which appeared warranted could move the child.

On now examining the posterior part of the vagina, and higher up, the feet of the second child could be felt descending into the pelvis; they appeared to embrace the body of the first child, and, on applying extension to the latter, they descended with it, as if entangled in it, and, on relaxing the extension, all retreated together. On passing my hand along the abdomen of the first child, which was turned towards the mother's pubes, I could not discover any cord, though the hand passed higher up than the proper umbilical region; but it appeared as if a fold of integument occupied its place, and this seemed to be forcibly drawn up into the mother's abdomen. At this stage (my father not being in town) I called on Dr. Harvey, and described the state of the case as I have now done, adding that I was strongly inclined to think that there was union between the abdomens of the two children, that the fold of integument I have referred to was the isthmus of connexion between them, and that perhaps a cord more directly attached to the other fœtus supplied the wants of both. With his usual kindness, he immediately volunteered to accompany me to the poor woman's house, when, after a good deal of investigation, he succeeded in hooking his finger round a cord. On endeavouring, however, to draw it down sufficiently to ascertain to which child it belonged, it gave way under the finger as if rotten; but on catching the short end between the finger and thumb, its attachment could be traced to the first child.

Dr. Harvey now suggested that what I have described as a fold of integument as the upper part of the child's abdomen might be deceptive, and the state of parts present be owing to the lateral compression causing a sort of puckering of the integuments in front; and the fact that the finger could be sunk into a deep sulcus at the side of this fold, and that the lower margin of the ribs could be traced from either side to the mesial line, rendered it difficult to conceive that the abdomen could be extensively united; besides, the height at which the parts were placed made it impossible to arrive at a positive diagnosis. These points, together with the extreme improbability of the thing, caused us almost to lose sight of the idea of abdominal union, especially as the remarkable manner in which the legs of the second child embraced the body of the first appeared in some measure to account for the difficulty of bring-

ing the latter down. More unsparing efforts were now made to accomplish this object, it being no longer necessary to avoid injuring the child, as it was of course dead, the cord having been accidentally ruptured some time before, as I have mentioned; but the utmost extension that Dr. Bernard and I could exercise together scarcely brought it down an inch farther. Dr. Harvey now succeeded in passing the blunt hook over one shoulder, and in bringing down the arm; but this, though it allowed one leg of the second child to pass up, did not appear to improve matters in the slightest degree. Nearly two hours having been thus spent in these almost fruitless efforts, the woman became very impatient and much exhausted, and it was thought advisable to postpone further interference for the present; and Dr. Harvey recommended that I should, in the meantime, get my father, Dr. Hobart, to see the case, and consult with him as to the advisability of giving ergot, and so establishing uterine action, which was still very feeble, and suggested the following points for consideration, viz., that if the parts at the brim of the pelvis were incapable of passing through it in their present state, they would become so impacted under uterine action as to render operative interference much more difficult, if not impossible; but that, if this disproportion did not exist, uterine action would be a most important agent in completing the delivery.

After allowing the woman about two hours to recover herself, I again visited her with my father and Dr. Bernard, when we agreed that it was better to defer the use of ergot for the present, owing to the entanglement of the feet of the second child about the first, and the consequently greater probability of impaction. I now succeeded in passing the hook over the second shoulder, and drawing the arm down, but this had no better effect than the descent of the first; the legs of the second child, which had before surrounded the body of the first, now embracing the neck with a firm hug, and no further progress could be made. I was again obliged to trespass on Dr. Harvey, who immediately accompanied me, and devoted all his skill and energy to the case. Traction on the child in its present position appeared utterly useless, while every effort to alter its position, and turn its abdominal aspect towards the mother's sacrum, or to free its neck from the grasp of the second child's legs, though modified in every conceivable way, also failed. At length Dr. Harvey having passed his hand along the back of the child, and got his fingers well over the shoulders (a manipulation which had several times been attempted before ineffectually), he succeeded by a strong effort in bring-

ing them down into the pelvis, through which they then advanced readily, and soon passed the perineum, followed by the head; and now there could be no longer any doubt about the cause of the previous delay and difficulty, as the child hung from the vagina by the upper part of the abdomen, showing evidently that this part was adherent to the other child.

Nothing further remained to be done than to see that the second child was advancing in a position favourable for delivery; and Dr. Harvey, having discovered on examination that the arm was presenting, immediately turned, and the labour was completed in a few minutes more. The uterus now contracted well under the influence of a dose of ergot, and the placenta was expelled in a short time; it and the cord being single, and similar in every respect to those of an ordinary child.

The children (both females) proved to be united by the abdomen from the lower edge of the thorax to about the umbilicus. There was an extensive laceration of the abdomen at the lower part of the united portion, from the violence used in dragging on the first child. From this the intestines protruded, and the cavities were seen to communicate freely, no appearance of a septum existing at the united portion. The insertion of the cord was rather obscure, in consequence of its having broken short, as already described, and of the lacerated state of the abdomen in its vicinity. On a subsequent and more careful examination, one umbilical vein could alone be found, and, on injecting this, the wax flowed readily into the right auricles of both hearts, showing that this vessel continued single until after its entrance into the common abdominal cavity. I next proceeded to examine the intestinal canal, and, commencing with the stomach of one child (which we may call No. 1), to which I ascertained it belonged, by passing a bougie down the œsophagus into it, I, with some difficulty, followed the course of the intestine, until I reached to about the junction of the jejunum and ilium. Here it suddenly dilated into a pouch at least four times the size of the stomach. It was somewhat triangular in shape, and from the opposite angle of this the small intestine was again prolonged, and could be distinctly followed till it terminated in a cæcum, passing on to the colon and rectum; but, strange to say, they were those of the other child, or No. 2. A second examination, made with great care, proved the correctness of the first. I had, in both examinations, found some obscurity about the commencement of the canal; as, at a short distance from the stomach, it appeared to be entangled in, or adherent to, another fold; but I was quite satisfied that I had followed it correctly.

I then commenced with the stomach of child No. 2, and, after finding a somewhat similar obscurity near the commencement of the canal, distinctly followed it into the same dilatation already referred to; and, as the intestine which I had now traced into it from the stomach of No. 2 proved, on examination, to be the same which I had before followed from No. 1, it was evident that union had occurred higher up between the two alimentary canals, and that they had then continued as a common tube into the dilated portion. Accordingly, a close examination showed that the two duodena ran towards one another, and, uniting, appeared to connect the stomach by a tube of about three or four inches long; and from near the centre of this a common jejunum passed off, and descended, as already described. On again examining the dilatation of the small intestine, it appeared that the third angle of the triangle was prolonged into a sort of infundibulum, and from this could be indistinctly traced what appeared at first to be a mere thickening of the edge of the mesentery; but, after following it for about three inches, it began to assume more the appearance of an intestine, and, about two inches farther on, it had become a well-formed ilium, which again passed on to the cæcum, colon, &c., to terminate in the anus of child No. 1, or that with whose stomach we first commenced. The livers were so united by their right lobes that they could not be separated into two distinct organs. The accompanying lithograph, taken from a photograph of this monster, gives a fair idea of its outward appearance. (Plate VII.)

On meeting with a case such as this, the question naturally presents itself, How do these monstrosities arise? whether are they the result of union between two originally distinct embryos; or are they developed from a single one? This has already been the subject of one of the most interesting physiological discussions on record, having occupied the attention of the Academy of Medicine of Paris for a period of nineteen years, from 1724 to 1743, leaving the matter, however, in the end, almost as unsettled as when the discussion began. As many new facts have, however, since been recorded, it may not be out of place to make a few remarks on the subject here, and to inquire whether the present case may tend to support the arguments on one side or the other.

One of the most interesting points that attract our attention in connexion with those double monsters is the uninterrupted series which has been observed from that in which there is union only of a small part (all the external organs of the two children being fully developed), to that in which there exists

merely a double head or extremity, or even an additional finger or toe; for there is scarcely a conceivable degree of duplicity between those two extremes that has not been met with, and, indeed, so complete is the series that we are forced to admit the same origin for all, it being impossible to say that any theory will explain such and such cases that is not applicable to the next degree of duplicity. Now it appears altogether unreasonable to suppose that the existence of a supernumerary finger, &c., should involve the union of two embryos; for we must in that case imagine such a fusion of the two that one becomes absolutely blended into the other, as if we were to melt two pieces of lead together to form one lump, or rather that, like the two pictures in a stereoscope, every organ of the one has been so coapted to the same organ of the other, with the exception of the double part, that no trace of union can be detected. And, were we to regard it as an established fact that two embryos, on coming together, in any stage of their development, are capable of becoming united, we would at least expect that a slight degree of union would be of more frequent occurrence than a high degree of it, and that, therefore, double monsters would be comparatively common in a direct ratio as they approach to the original state of separate twins; while experience, on the contrary, shows that the existence of a supernumerary thumb or finger, or the greatest possible degree of union, is a matter of every-day observation; while, on the other hand, the occurrence of complete duplicity is extremely rare. And if it be argued that when two embryos are placed in a position favourable for union to take place, the tendency is for all parts to unite, so that the portion which remains ununited is the exception to the rule; we may in that case naturally suppose that many of the apparently single children which are born were originally composed of two embryos, but that fusion had been effected to the fullest extent, the process not having failed in any part.

On considering the descriptions given by various authors, we cannot fail to observe a certain regularity about the malformations of those creatures, as if they were arranged on some fixed principle. Thus we find that the so-called union invariably takes place between similar parts: an abdomen is always joined to an abdomen, a pelvis to a pelvis, &c.; while no case has, I believe, been ever recorded of a head being attached to an abdomen, or a pelvis to a thorax; whereas, if union be supposed to take place at all between two embryos, it ought to occur indifferently between any parts that might chance to come together. Again, it will be observed that in every well-

authenticated case the fœtuses have been both of the same sex. This is a very remarkable coincidence, and cannot be attributed to mere accident, as the number of instances in which the uniformity of sex has been observed is abundantly sufficient to establish the fact that the occurrence of a double monster, with the two fœtuses of different sexes, is extremely unlikely, if not, indeed, utterly impossible.

Both those rules apply, as far as I have been able to ascertain, to the class of monsters called Heteradelphs, in which the rudiments of a second fœtus are found attached to some part of the body of a well-developed child, and are fully borne out in the present case, where we find two female children adherent by the upper portion of the abdomen.

Vrolik[a], moreover, remarks, in reference to cases like the present, when the connexion is at the abdomen,—"The abdominal organs are always in some degree connected: the two livers are usually continuous; a spleen, pancreas, and stomach are commonly found in each body, and the stomach has its own duodenum, which, after a while, being continued into the jejunum, unites with the other to form a single track of small intestine, which again divides into two canals, leading respectively to the large intestines of each body." This description so accurately corresponds to the condition of the abdominal viscera in the case just described, that it would appear to have been written from an observation of it,—the continuity of the two livers, the union of the jejuna, and the subsequent subdivision into two canals, leading one to the large intestine of each body, being exactly the condition here observed. Can anything be a stronger proof that this is the natural arrangement of the intestine in double monsters, than that a description, written from previous experience, should be so accurately confirmed by subsequent observation? Still further showing that the development of those creatures is regulated by certain laws, and is not the result of casual circumstances[b].

From the above facts, then, it is evident that, should we contend for the production of double monsters by the union of two embryos, we must admit, first, that the extreme degree of

[a] In the article "Teratology," in Todd's Cyclopædia of Anatomy, p. 970, from which article I have quoted most of the facts and arguments here put forward.

[b] It was after the above was in type that I saw a very able paper by Dr. Montgomery, in a former Number of this Journal, in which he refers to a case recorded by Cruveilhier, where a similar union of the jejuna existed, and to a case which came under Dr. Montgomery's own observation, and which precisely resembled the present case, not only as to the union of the jejuna, but in the existence of a remarkable dilatation of the lower part of the united portion.

malformation, or that in which union has taken place to the highest degree, so that only a single finger or toe still retains its natural or separate condition, is the most common form of that monstrosity; while that in which but a slight deviation from the natural state of things, or where the two continue nearly separate, is extremely rare. Secondly, that some peculiar affinity exists between similar parts, which causes them to unite, while there is a total incapacity in dissimilar parts to unite to one another. And thirdly, that this affinity does not exist between embryos whose development would result in the production of fœtuses of different sexes. Any one of those suppositions is so far-fetched as to render the fusion theory highly improbable; but when all these are combined, it amounts very nearly to a moral certainty that this is not the true explanation.

The question, however, still remains open, as to whether the duplicity in those cases is owing to an original error existing in the germ from its earliest formation, or whether the monstrosity may subsequently have arisen from accidental circumstances. Nor does there appear to be a sufficient number of facts recorded which bear on the subject, fully to decide so abstruse a question. It is difficult to conceive such an injury inflicted on an embryo as would almost completely separate it into two, without destroying its vitality; or that the injury could be so nicely directed as to have the rudiments of every part on both sides of the wound. Nor would we expect that an embryo, or any portion of it, if thus divided, could develop all the parts in a perfect state from each of its subdivisions, which it would naturally have produced singly, if uninjured. We might imagine two heads, with one eye, one ear, &c., in each; but in the true double monster we find all the parts complete in each division of the fœtus. A very interesting observation, however, of Valentin's tends to prove the possibility of such a division; for he relates an instance in which an injury inflicted on the caudal extremity of an embryo on the second day was found on the fifth to have produced the rudiments of a double pelvis and four lower extremities.

On the other hand, we are not without some evidence in favour of the original duplicity of the ovum itself. Eggs, it is well known, are frequently met with containing two yelks; and it is also established that two ova may be formed in one Graafian vesicle; and this appearance naturally leads to the belief that double monsters, both in the human subject and in birds, might be attributed to the development and subsequent union of the two embryos in the one egg or Graafian vesicle;

but this opinion appears to have been founded on insufficient grounds, and is not supported by direct observation on the result of incubation of double-yelked eggs.

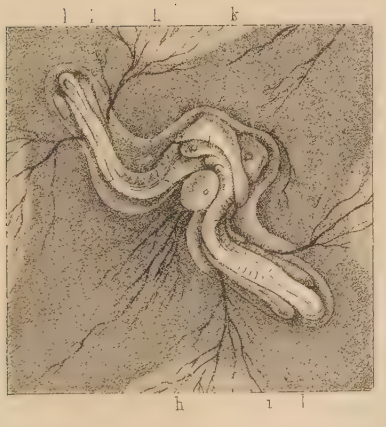
Thus C. F. Wolff states that a double-yelked egg is equivalent to a double ovum; that the product of its incubation would be twins; and that a double monster can only proceed from a single yelk containing a double germ. He has, moreover, observed that two completely separate fœtuses may be formed in a bird's egg on a single yelk. This was seen in an egg which had been incubated for six days, and the embryos were then so distinct that there appeared no probability of union until, perhaps, the close of the incubating process, when the entrance of the yelk into the abdomens of both, and the contraction of the umbilical aperture, might bring those parts together; and it appears just possible that in a double-yelked egg the two yelks might come to coalesce during incubation, and union take place between the embryos of both in the same manner as if the yelk was originally single; but this will account only for union at the umbilicus itself, the abdominal viscera being perfectly distinct, and could not apply to "lateral, posterior," or other forms of duplicity; while the following observations of Mr. Allan Thompson tend strongly to support the idea that duplicity is owing to an original defect in the embryo, and is not the result of any influence external to itself. He has, for instance, demonstrated that on "one yelk and one germinal membrane, or blasdidermic vesicle, there may be formed in birds two primitive grooves." This was observed in a fowl's egg after 16 or 18 hours' incubation, the appearance of which will be best illustrated by a drawing after Allan Thompson, which I re-copy from Vrolik's article (in Todd's Cyclopædia of Anatomy), already referred to. (See Plate VIII., Fig. 1[a].) In this case it appears almost certain that, had the process of incubation been completed, it would have resulted in more or less duplicity. And this idea is further borne out by a second observation of Allan Thompson on a goose's egg after five days' incubation, in which a double body and the rudiments of four upper and four lower extremities could be perceived, a drawing of which I have also copied from the same authority. (See Plate VIII., Fig. 2[b].)

From the above facts I think we are warranted in the con-

[a] *a*, the germinal area of the cicatricula; *b*, the transparent area, containing two primitive traces of embryos; *c c*, primitive grooves of the double embryonic trace, on each side of which are seen the laminæ dorsales.

[b] *g*, the common heart; *h*, rudiments of the superior, *i*, of the inferior extremities; *k*, the common cephalic fold of the amnios; *l*, the caudal folds.

From a fowl's egg after sixteen or eighteen hours' incubation.
Magnified four times.



Double embryo removed from a goose's egg after five days' incubation.
Magnified four times.

clusion that double monsters are not the result of union between two embryos, but of some process of our development of a single one. But it appears to require further investigation to enable us to determine whether the malformation is produced by natural or acquired duplicity, or whether it may not originate in either of the two causes.

On reviewing the foregoing argument in favour of the origin of double monsters from but one embryo, an idea presents itself, which, though it may throw no light on the question at issue, appears to be of some interest in a physiological point of view, namely, that if in those cases the two portions of the monster are invariably of the same sex, it is evident that the ultimate form of the reproductive organs is determined at a much earlier period than our senses will enable us to distinguish between the male and female. Thus we have generally regarded the sex of an embryo as quite undecided during the earlier months of gestation, after which period the genitals seem capable of being developed indifferently either as male or female organs. Now, according to Allan Thompson's experiments, duplicity commences at an extremely early period, being apparent in the formation of the primitive groove. Or, if we adopt the theory of union between two embryos, it necessarily follows that such union must take place before they become covered by the membranes; for, were those appendages developed, they would become consolidated with the embryo at the point of contact, and would form a septum in the general amniotic sac, consisting of the two sets of membranes; or, in fact, each portion of the monster would possess a distinct liquor amnii of its own; whereas in those cases it is well known there is never more than one amnion. But if the sex of this embryo were not determined before the commencement of duplicity, there could be evidently nothing to prevent one part of a monster from becoming a male, and the other a female; and therefore, if it be established that this never occurs, it follows that the sex of the embryo is as much fixed from its first formation as is the particular animal into which it is to be developed.

Art. XX.—*Case of Carcinoma of the Bladder, with General Remarks on the Disease.* By C. Thompson, M. D., L. R. C. S. I., formerly Surgeon to the Finglas and Glasnevin Dispensaries, and Claremont Institution, and late Assistant-Surgeon, Rifle Brigade.

Captain S——, aged 60, of bilious temperament and sallow aspect, consulted me in August, 1853, under the following circumstances. He had in early life served in the Royal Artillery twelve years, of which three had been spent in the West Indies. He afterwards retired from the army, and continued to enjoy good health for many years; had been always temperate; had never suffered from gout or syphilis. His grandmother had died of carcinoma uteri. Three years ago his horse stumbled under him, and he received a bruise on the perineum from the pommel of the saddle. The effects of this accident, seemed, however, to have passed away. About this time he sustained a pecuniary loss, which caused him much anxiety and depression of spirits. In the summer of 1851 he went to London, where, on a very hot day, he fatigued himself excessively walking about town; that evening he was seized with sharp pain in the perineum, which was followed by hemorrhage from the urethra. This was the first indication of his complaint. From this time he began to suffer from difficulty and pain in passing water, and uneasiness about the neck of bladder; the pain, which was of a burning character, and extended at times to the glans penis, was increased by emptying the bladder. Micturition gradually became more frequent and distressing. He rapidly lost flesh, and at length, between bodily suffering and repeated attacks of hemorrhage, his health entirely gave way. He consulted the most eminent practitioners in London and Dublin. Each sounded him for stone, but, after repeated trials, failed to detect any calculus. These examinations gave him great agony. Some diagnosed his case to be disease of the prostate, with varicose veins of the urethra; others, chronic vesical catarrh; while a third party were of opinion he had fungoid disease of the neck of bladder. The usual remedies were prescribed, but the patient continued to grow worse. Before he consulted me, he had been under the care of my friend Dr. Thomson, of Liverpool, who made a microscopic examination of his urine, in which he discovered cancer cells, and portions of encephaloid detritus, which led him to infer the existence of malignant disease. He kindly acquainted me with the particulars of his examination, and there could be no longer any doubt as to the correctness of his

diagnosis. At this time the calls to micturate were very frequent, and accompanied by great suffering and difficulty. Complete retention often occurred. For a long time he would not allow any instrument to be passed; the last attempt to introduce one having been followed by profuse hemorrhage and an aggravation of his sufferings. Having, with difficulty, prevailed on him to submit to another trial, I succeeded in passing a No. 8 gum-elastic catheter, and drew off a quantity of dark-coloured ammoniacal urine, which was very turbid and offensive. No hemorrhage followed. The obstruction was evidently in the neck of the bladder, where the instrument was tightly grasped; and, in passing through, caused a sharp pang. No enlargement of prostate was detected per anum, nor could any tumour be felt above the pubes, where, however, the fat of the integuments must have rendered it very difficult of detection. During the day he was comparatively easy, but at night his distress was extreme. The slightest chill or the least irregularity of diet was sure to aggravate his complaint, and to bring on retention of urine. He often complained of pains in his back, which he attributed to lumbago. This pain was not increased by pressure, nor was it accompanied by nausea or retraction of testes. The appearance of the urine varied from time to time; sometimes it was clear, but mostly of a dark or smoky colour, turbid, and highly ammoniacal, from decomposed urea. Albumen was always present. On resting a few hours, a copious sediment formed, consisting of a thick, ropy, viscid mucus, mixed with pus and blood, and with a friable, sandy deposit of triple phosphate. Hemorrhage was frequent; sometimes the blood flowed nearly pure, at other times it was mixed with the urine; on other occasions it followed the stream of urine, and occasionally the latter would be interrupted by clots of mucus or blood getting impacted in the urethra, and requiring considerable force to dislodge them. The hematuria often came on suddenly, and apparently without any cause, contrasting in this respect with what obtains in stone, where the hemorrhage is induced by rough exercise or some mechanical cause of irritation. Appetite bad; tongue loaded, especially at root, with a yellow slime; bowels irregular, sometimes constipated, often affected with bilious diarrhœa, which, from its acrid character, excoriated the anus, and aggravated, by contiguous sympathy, the irritability of bladder. Latterly he had begun to suffer from palpitation and attacks of asthma, but there was no stethoscopic sign of heart disease, neither in the intervals of dyspnœa was there any evidence of pulmonary disorder. At times he appeared to rally, but by degrees his ap-

petite grew worse, and his strength and spirits entirely failed. The calls to make water now became almost incessant, and the convulsive efforts to empty the bladder were so agonizing that he often trembled in every limb. He died on the 18th of June, 1854, retaining his intellectual faculties perfectly clear to the last.

Treatment.—In the early stages, demulcents and mucilaginous mixtures, with liquor potassæ and hyoscyamus, decoction of pareira brava, buchu, uva ursi, Brandish's alkaline solution, with nitric spirit of ether, and Battley's sedative, &c., were prescribed. After a time, copaiba and cubebs were tried, but deranged the stomach, and could not be borne. Retention of urine was relieved by the warm hip-bath, and draughts of the tincture of sesquichloride of iron, with tincture of opium and nitric spirit of ether in camphor mixture. Hemorrhage was checked by gallic acid, to which the acetas plumbi and opium were sometimes added. Chalk mixture, with tincture of catechu, or kino, or the compound starch-powder, were given to stop diarrhœa. Constipation was relieved by fluid magnesia, compound rhubarb pill, or enemata of warm barley-water, to which castor-oil was sometimes added. Pain was relieved by opium, which may be regarded as the sheet-anchor in the treatment of these miserable cases. It was given largely, both by the mouth and rectum, in the forms of pill, draught, enema, and suppository. When in the latter stages, it began to lose its effect, hydrocyanic acid was advantageously resorted to. Chloroform was applied to the loins and hypogastrium, in the form of embrocation, but with little benefit. The diet was light, and as nourishing as could be borne, with a couple of glasses of old port or sherry, in Vichy or Seltzer water, every day. Malt, spirits, acid wines, and fruit of every kind (except strawberries), either disagreed with the stomach, or aggravated his complaint by imparting irritating qualities to the urine. Nothing afforded such relief as frequently washing out the bladder with warm decoction of poppy-heads, after which a couple of ounces of weak nitric acid lotion (1 minim to 1 ounce) were injected and allowed to remain some minutes in the bladder; this was occasionally alternated with a solution of nitrate of silver (1 grain to 3 ounces) in distilled water. These washings, which were followed by an opiate, afforded great relief for a time, though, like every other remedy, they at last gradually lost their effect.

Autopsy, 24 hours after death.—Surface livid; body less emaciated than might have been expected, especially the abdomen, which was covered with a deep layer of fat; head not

examined; chest well formed; no effusion in pleuræ, which looked healthy, except a few melanotic deposits on the surface; bronchi congested and containing mucus, some of their glands hardened and enlarged; lungs healthy, though much congested in the most depending parts; pericardium free from disease; heart rather enlarged, though soft and flabby in substance; its cavities and valves were sound.

Abdomen enormously tympanitic. Stomach small, pale, and attenuated, except near the pylorus, which was congested and thickened. The small intestines presented nothing remarkable, except some patches of congestion in the duodenum, and that the small glands were enlarged and indurated in parts. The cæcum showed patches of congestion, and the large intestines throughout presented similar appearances. The rectum was much congested, thickened in its coats, and narrowed in caliber. The areolar tissue also between it and the bladder was thickened and indurated. No ulceration was detected throughout the alimentary canal. Liver rather firm in structure, and yellowish, but otherwise normal. Spleen and pancreas presented no remarkable appearance. Scattered over the peritoneum were several melanotic spots, like those observed on the pleuræ. The urethra was perfectly healthy throughout, except at the membranous part, where a thin, narrow, membranous band extended across its canal, from one side to the other. The prostate was free from any appearance of disease. Bladder enlarged and profoundly altered. Close to the orifice of urethra, and springing from the triangular space between it and the orifices of the ureters, was a flat, cauliflower fungus, half the size of an orange, covered with vegetations, which presented an arborescent appearance, and which were streaked with deposits of triple phosphate, the interstices being filled with a viscid sanies. The calcareous deposit was friable, readily breaking down under the finger. On the posterior part a similar fungus existed, but of smaller size. The cavity of the bladder was nearly filled by these growths, and deeply sacculated at the sides; its coats were enormously thickened. Both ureters were distended into subsidiary receptacles, as thick as a man's finger, their whole length. Both kidneys were a mass of disease. The cortical and secreting structure had disappeared, and was replaced by such a number of small abscesses (from the size of a pea to that of a hazel-nut, and filled with yellow pus), that it is hard to understand how these organs could have at all performed their functions. Both renal capsules seemed enlarged and indurated. The testes and spermatic cords were quite free from disease.

The foregoing case affords a very good illustration of this terrible malady, as well in the symptoms observed during life, as in the post-mortem appearances. It suggests several important points for consideration, to a few of which I shall briefly advert. Primary cancer of the bladder is by no means an uncommon complaint among men, though it rarely occurs in the female; when cancer *does* attack the female bladder, it will be found in almost every instance to be secondary, and to have extended from the uterus. With few exceptions, it begins in the neck of the bladder, in this respect resembling carcinoma uteri, which as invariably commences in the cervix of that organ. The close vascular connexion that exists between the urinary and generative organs, and the near relation they bear to each other both in structure and physiology, might seem to warrant the inference that, when either is attacked with malignant disease, the other must sooner or later be involved. Such a conclusion, however, would be erroneous, and it will be found, on the contrary, that disease may exist to a fatal extent in either, without the other becoming at all implicated. Of this the foregoing case affords an example. Here the prostate was healthy, though in close contiguity with extensive disease of the vesical surface, and there was no organic change in the testes or cords, while the kidneys were entirely disorganized. It is true, this complication does occasionally happen, but such cases constitute the exception, not the rule.

Cancer is more prone to attack the urinary organs in the male, and the generative in the female. On the whole, no satisfactory connexion has been established between the diseases of the urinary system generally and the development of cancer, and we are as much at a loss to account for its occurrence in these organs as in any other part of the frame. In this case the morbid action probably originated in the fall on the perineum, in the same way as a blow sometimes lights up scirrhus of the mamma in the cancerous diathesis; the local injury being necessary to the development of the morbid action, which might otherwise have remained dormant. This complaint is seldom met with before the age of 40, the majority of cases occurring between the ages of 50 and 60. Grief and the depressing passions are so often associated with it, that, in certain states of health, they may perhaps be regarded as predisposing causes. Scirrhus is rare in the bladder, encephaloid being the form most commonly observed. It may coexist with calculus, and in a measure predispose to this affection, by impeding the discharge of urine, and so leading

to a hypersecretion of phosphatic salts and the deposition of calcareous matter; these deposits often form an incrustation over the tumour, which may convey to the hand the sensation of stone. The disease usually begins in the triangular space between the orifices of the urethra and ureters, sometimes on the fundus or anterior surface, but rarely on the sides of the organ. Hemorrhage is often the earliest symptom: at first the surface of the tumour is smooth, until the mucous membrane is destroyed, after which fungi sprout up, and it becomes rugged, from the development of highly vascular vegetations, which spring from a hard base, and often bleed freely and obstinately. The base may be broad and flat, or pedunculated, and encrusted with the calcareous substance already alluded to. In general only one tumour is found, but often two or more. By degrees they fill the cavity of the viscus, and by pressing on the orifices of the ureters prevent the descent of the urine into the bladder, thereby leading to dilatation of these ducts, and eventually to disease of the kidney.

One of the earliest effects of the fungus, when seated in the cervix, is to obstruct the urethral orifice; producing, first, difficulty in micturition, and afterwards complete retention: the increased efforts only forcing the tumour more tightly against the opening. The impossibility of entirely emptying the viscus leads to accumulations of fetid urine, which soon decomposes, and the free ammonia thus formed still further irritates the already inflamed mucous membrane. This state of things may lead to suppression of urine and uremic poisoning, the patient dying comatose. It is a curious fact, however, that patients afflicted with cancer of the kidneys do *not*, as so commonly happens when the organ is affected with diseases of other kinds, die comatose. On the contrary, as in the case before us, they retain their faculties clear to the last even in the worst cases. The duration of the disease varies from six months to many years.

In the early stages the diagnosis is always difficult, often impracticable: the result is much suffering to the patient, which might be spared him if the true nature of his complaint could be earlier ascertained. It may be mistaken for chronic vesical catarrh, the result of old stricture, diseased prostate, or stone; and especially if, as sometimes happens, the catarrh be accompanied by ulceration of the mucous lining, leading to frequent hemorrhage; the presence or otherwise, however, of stricture or enlargement of the prostate will, in connexion with the history of the case and present symptoms, in most cases enable the practitioner to decide correctly. But the worst

error, and that which is most likely to happen, is to mistake the complaint for stone. Suffering from an incurable malady, and failing to get relief from any one, the unfortunate patient goes about from one practitioner to another. His symptoms resemble those of stone, and each sounds and catheterizes him in turn: thus he undergoes the same ordeal of torture from all, to the great detriment both of mind and body. In such cases the microscope is an invaluable means of converting doubt into certainty. It is true, mistakes have been made in microscopic examinations; but these are chargeable, not against the instrument, but the want of skill in the operator, and do not invalidate its efficacy in experienced hands. I would say, then, that when the patient is advanced in life, of cachectic aspect, when repeated trials have failed to detect stone, and there is no evidence of stricture or enlarged prostate; when there is frequent hemorrhage recurring, without any apparent cause, and the catheter is arrested in passing through the neck of the bladder; and when to these symptoms is added the discovery in the urine of cancer cells and encephaloid detritus; especially if cancer be hereditary in the patient's family, there should no longer be any doubt as to the malignant nature of the disease, and that, under such circumstances, to torture the patient any further with soundings for stone is as cruel as it is useless.

The following remarks may aid in the diagnosis of the earlier stages of these very difficult cases. Hemorrhage is a frequent symptom both of cancer and stone: in the former it comes on capriciously, and apparently without cause, when the patient is at rest, and is often profuse and obstinate; in the latter it is mostly induced by rough exercise, is small in quantity, and never obstinate. Cancer is always a disease of advanced life; stone is often met with in young people and children; in cancer the incrustations that simulate calculus are fixed and immovable; whereas a stone in the bladder, unless it be encysted (which is a rare occurence), shifts its position from time to time. In stone there is generally no difficulty in passing an instrument; in cancer of the cervix of bladder (its common seat) there is always difficulty, which increases with the progress of the disease. It may be added that in stone the stream of urine often stops suddenly, but when the patient turns on his side or back, it again flows freely. In cancer of the cervix such sudden interruptions seldom occur, unless when occasional clots of blood or mucus get impacted in the urethra.

In the treatment of this disease much may be done, if not to cure, at least to relieve the patient. In the early stages the

urine will be mostly found to be acid: hence the benefit resulting from the alkalies, which may be advantageously given with pareira brava (the best preparation of which is the decoction) in combination with sedatives, and, in cases where there is much irritability of the bladder or kidney, buchu will be found very useful. The Seltzer and Vichy waters also will be indicated, owing to the free carbonate of soda they contain. But when the complaint has been of long continuance, the quality of the urine changes, and becomes alkaline, with an excess of the phosphates. In such cases alkalines are contra-indicated. They disorder the stomach, and impair the general health, inducing a flabby state of the muscles and an anemic condition of the system. More benefit will be likely to accrue at this stage of the complaint from light tonics (perhaps with the mineral acids), and from a suitable diet and regimen. But frequent washings of the bladder with warm decoction of poppy-heads, twice or three times a week, will be the surest means of affording comfort and relief to the patient. In most cases the elastic bottle and single catheter will answer the purpose very well; but it sometimes happens, when the bladder is inflamed and very irritable, that an injection of even a few ounces will cause painful feelings of distention, and especially in those instances where rapid fungous growths encroach on the cavity of the viscus. In such the double canula, catheter, and syringe, by which a continuous stream may be passed through the bladder, will be found most effectual.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Treatise on Obscure Diseases of the Brain and Mind; their incipient Symptoms, Pathology, Diagnosis, Treatment, and Prophylaxis. By Forbes Winslow, M. D., Hon. D. C. L. Oxon., &c. London: Churchill. 1860.

Physicians will do well to study this work. One who deservedly occupies—it is not invidious to say—the highest position in the medical scientific world, brings forth the treasures of his experience, and invites his profession to share with him the riches he has acquired. Years of patient watching and anxious research have been passed in their accumulation; they are now outpoured with a generous hand. Of small coin there is none. Those who think that great wealth should be doled in pittances for the benefit of the million are advised to lay this volume aside. Hand-books to medical knowledge, wherein are devised subtle means for misleading the judgment, and little points largely argued, will prove most acceptable to narrow intellects. Where life is the game at stake, artifice can scarce add to the danger of ignorance. For the great and good of the profession, who, with disciplined experience and enlarged views, regard disease as deserving of philosophic study,—who perceive in the investigation of the laws of life much that is inexplicable by the mystery of death,—who acknowledge that man, fearfully and wonderfully made, is in health at best the material instrument through which a "divinæ particula auræ" finds expression,—who admit that in disease pathology is but the indication of agencies beyond the reach of the knife, the ultimate exposition of changes accomplished;—to those who estimate vitality as something higher than a system of mechanics, and are impressed with the belief that medicine is independent of chance, this volume will prove an acceptable offering. For such, we presume to add, our criticism is intended.

The *recognition* of cerebral disease, when an accomplished fact, is, unhappily, by too many considered as being equivalent

to its *diagnosis*. Its spontaneous declaration must not, however, be confounded with its detection. In the difference between the stages to which each appertains, fatality not unfrequently rests. Experience arrives too late when the citadel is carried, and the means of defence are in possession of the enemy. Inquiry must then be directed to the method by which eviction or cure may be effected, rather than to the particular steps whereby admission was gained. Consequences for the time prevent causes from being discussed. It avails not to say, "Why was not this attended to?" or, "Did you not perceive so and so?" Something must be done; danger, it may be death, is at the door. Ingenuity hastens to the rescue of incompetency when "prompt measures" endeavour to atone for time lost, observation neglected, opportunity lapsed, and, as too generally occurs, irreparable injury sustained. Common sense affirms that, in the ordinary affairs of life, surprise is usually the result of indifference. In affections of the brain, we venture to affirm that it is especially so. The term, "latent disease," so freely employed to signify an abnormal condition in which morbid indications are said to be not present, might, were truth vindicated, find a different interpretation. Nature is unjustly blamed for permitting disease to steal a hostile march on humanity. We venture to affirm that, in the large majority of cases, the term *latency* is altogether misapplied. Indications of coming danger do present themselves, but are suffered to pass unheeded, or, if observed, are not in their importance recognised. Dr. Winslow and disease are on familiar terms; hear his testimony:—

"Upon investigating the history of the diseases of the encephalon, how frequently does the medical man discover that positive and unequivocal symptoms of brain affection have existed, and, perhaps, during the early stage been observed for months, and in some cases for years, without exciting any apprehension on the part of the patient, his family, or his friends. In the majority of these instances, clearly manifested head symptoms were entirely overlooked, and, if noticed, no right estimation was made of their value."

The late Dr. Marshall Hall too truly remarked—"A useful work might be written on the subject of insidious impending diseases, with the view of making their first or antecedent symptoms known to the public, and of thus suggesting the care and means necessary for their prevention."

The present volume, we believe, amply supplies any deficiency in this particular which may have hitherto existed. Dr. Winslow sets forth a series of familiar illustrations of cerebral affections, which, without *apparent* warning, terminated fatally. These cases must be studied; they are frequent and

familiar. Who cannot recall analogous instances? The merchant, vigorous in health, mixing daily with his family, going to his counting-house, engaging in the active pursuits of commerce, is suddenly stricken. The anxious attendant, whose mental and physical energies have been too severely tried, exclaims, "I am gone," and immediately is comatose. The cheerful host leaves his guests; his last jest has scarcely gone round, ere friends are summoned to his side to see him breathe farewell. Death under similar circumstance becomes invested with additional terror. When the overwrought mind, on whose labour public attention hangs, unexpectedly bursts its material bonds,—when the great, the good, the wise, in the discharge of duties, ministering to the pleasures of home, or indulging in the pursuits of science, are, without previous suffering, summoned to their rest, consternation is felt by all. Whom will the winged shaft next strike? "Died by the visitation of God!" Inscrutable wisdom, which is thus manifest, has, in infinite mercy, placed within the reach of humanity means whereby disease may be relieved, and death delayed. Bowing in humility to the divine decree, let us inquire how far we are enabled, by the assistance and guidance of science, to anticipate that event which our nature must one day realize; and how far, in cases such as have been alluded to, careful investigation might have, at least for a time, enabled the physician to avert the calamity.

"I would ask," writes Dr. Winslow, "whether the affections of the brain, in the majority of cases, are not preceded by a well-marked, clearly-defined, but often undetected and unobserved precursory stage? Is it possible for a person to be suddenly laid prostrate in the arms of death by an attack of apoplexy, cerebritis, meningitis, paralysis, acute softening, or mania, evidencing, after death, long-existing chronic alterations in the cerebral structure, without having exhibited, for some time previously, faint and transitory they may be, but nevertheless decidedly characteristic symptoms, pointing unmistakably to the *brain* as the *fons et origo mali?* Is not the alleged absence of all premonitory symptoms more *apparent* than *real?* Would not the history of the antecedents, the pre-existing pathological state of these cases, if carefully and cautiously analyzed, afford conclusive, if not demonstrative evidence of a prior state of undetected and unrecognised brain disorder?"

We answer in the affirmative. We believe that, in the illustrations quoted, medicine cannot be regarded as altogether blameless. How far are we warranted in asserting this? For a moment consider. Analogy appeals to experience—experience confirms analogy. It is generally admitted, that

no structural changes can originate in the heart, lungs, liver, stomach, uterus, kidneys, or bladder, without presenting, prior to death, obvious symptoms of their existence. All this is true; and yet it is also true that, in rare instances, extensive physical alterations may result from disease, without serious disturbance to the special functions of organs so affected. This may be said to be due to the subsidiary functions which organs mutually exercise, preventing, or at least modifying, the inconvenience which would otherwise be experienced. Accept the fact as being so. Upon every principle of *à priori* reasoning, the conclusion presents itself that serious structural disease of the brain could not be in process of development for months, and in some cases for years, without in a comparatively greater degree manifesting impairment, derangement, disturbance, or modification of the recognised and admitted psychical, material, and sensorial functions of the cerebro-spinal system. The material instrument of thought has no organ to which its duties can be delegated. Why, then, are not functional disturbances immediately recognised? When structural alterations are perfected, though their progressive development of necessity interferes with the efficient discharge of psychical functions, the association between consequence and cause is, nevertheless, lost sight of; and why? The patient is unconscious, friends are unsuspecting, the physician unguarded. Accustomed to recognise the material source or evidence of disease in demonstrable organic alteration, a tendency to require the presence of such, influences the judgment; and the means we possess for arriving at a diagnosis in one class of cases unconsciously become, if not sources of difficulty, certainly suggestive of doubts in another. It is well to remember the relative facility in the diagnosis of visceral as distinguished from cerebral affections. The reason why in one a tyro may decide, and in the other a philosopher alone can determine, at once suggests itself. Auscultation, percussion, palpation, comparison, experiment, demonstration, separately or collectively, are available for the detection of visceral morbid action or the recognition of abnormal phenomena. A normal standard condition of health, by which these may be determined, is admitted. The evidences of disease essentially vary from this standard, and are sensibly felt and recognised by the sufferer, who is their most usual expositor to the physician. In cerebral affections it is far different. Every means of interrogating the material organ is excluded, more particularly in the initiation of disease. Synthetical analysis alone is available. Reasoning from results, we investigate causes, and, in many in-

stances, have first to determine the standard by which such causes must be estimated. Each case thus becomes a separate study, in which, for the purposes of special diagnosis, general principles are subordinated to individual psychical or physical states. As a consequence, while in visceral affections the ear may be converted into the eye, and positive inspection or experiment dissipate doubt, in difficult and complex cases of cerebral disease approximate truth is the most that can be arrived at.

"I do not affirm, that in all cases of incipient disease of the brain, the physician, even if his attention were closely riveted to the existing pathological condition, *could satisfactorily diagnose its exact nature, or point out its precise locality;* but he will have little or no difficulty, after carefully analyzing the case, in deciding the *general* question, whether the brain is the *seat* of disease, and the disorder, apparently referable to that organ, is of a sympathetic or an idiopathic character."

The "general question"! Where are its limits?

"Structural alterations may, undoubtedly, to a considerable extent, be developed in the material instrument of the mind, without, for a period, in a marked manner interfering with *the mental, sensorial,* or *motorial* functions."

That is to say, ordinary observation will attach no importance to knitting of the brows,—it is thought: to a trifling sensation of numbness in some part of the body,—it will pass off: to a condition of general or local muscular weakness,—it is fatigue: to a state of ennui,—it is the weather: to mental peevishness, irritability, and physical restlessness,—these are the results of vexation: to an almost inappreciable depression or exaltation of the animal spirits,—one is out of sorts: to an impairment and disorder of the sense of light,—eyes are weak, or stomach is wrong: to loss, aberration, or confusion of memory,—too many things to think of: to defect in, or acute manifestation of the sense of hearing,—something which will pass off, and is of no consequence: to an inaptitude for mental work,—it is idleness: to an inability to concentrate the attention continuously on any subject,—dulness from bile: to a state of sleeplessness or condition of lethargy,—indigestion: to a trivial deviation from the usual mode of talking, such as suddenly pausing in the conversation, as if to regain a lost train of ideas,—absence of mind: to a slight defect in the articulation, associated with a transposition of words and inability to pronounce certain letters,—carelessness. To any or every cause but the true one are ascribed these several characteristic symp-

toms which Dr. Winslow affirms are frequently diagnostic of disease having commenced in the brain. These occur and recur. The physician, whose object it is, both on physiological as well as practical grounds, when consulted in a case of suddenly developed brain disease, to make himself acquainted with the past condition of his patient, institutes diligent inquiries into the invalid's pathological antecedents. To the interrogatory—"Have there been observed any previously manifested symptoms of disorder of the encephalon and nervous system?" the reply usually follows—"No; none whatever:" "the patient has not known a day's illness;" "his brain has never shown the slightest indication of any kind of disorder." Nay, more, in some cases all idea of past, and even existing, cerebral indisposition, is emphatically ignored, and zealously repudiated by the relatives of the patient. Why is this? Let the truth be told. Inducements for concealment combine with sources of error. Friends find in affection excuses for changes in tone of mind and temper, of habits and morale, which, though symptomatic of disease, are yet, to the ordinary observer, not inconsistent with health. Disease of the brain is regarded with fatal apprehension. Its appearance is believed to attach a family stigma. It may be that the ordinary medical attendant pays a casual visit, and prescribes some usual remedy. His attention is not specially attracted. The functional perversions of the nervous system which precede organic change, requiring for their recognition and due appreciation the peculiar experience which psychological study alone can give, in these, their early and most important stages, thus escape the untutored eye of the general physician, until such time as "DISEASED ACTION *has proceeded unchecked into* DISEASED ORGANIZATION, *and the patient has become incurable.*" It is no derogation from the high character of our profession to admit that equal excellence in the various departments of its extensive study cannot be attained by all. According to the mind's training is the acuteness of its vision. The sad neglect of what, to the psychologist, would have denoted well-marked symptoms of brain disorder, may, as Dr. Winslow well observes,—

"In a degree arise from the fact, that the abnormal mental state of the patient is, in many cases, viewed in the light of healthy exaggerations, eccentricities, or extravagancies of natural conditions of thought. It is indeed natural," he further states, "that such an idea should be entertained, even by educated professional men, whose attention has not been specially directed to a study of this class of disease, or whose opportunities of watching the progress of such affections have been limited and circumscribed."

What, however, is the consequence? Time is lost when every moment is of value. Chronic and incurable insanity results from the neglect of the disease in the first or incipient stage. Of the *seventy*, if not *eighty* per cent. of cases of insanity which admit of easy and speedy cure, if treated in the early stage, *thirty* per cent. are victimized, their infirmity being perpetuated by the withholding of curative remedies capable of having been beneficially, if not altogether successfully, applied. But it may be argued that sufficient has been admitted to exonerate practitioners who have thus erred. Be it so. Granted that hitherto sufficient care or attention has not been given to this subject,—can the same excuses be urged for the future, or, if urged, can they be received? We apprehend not. The profession will demand, and society will expect, that the consummation of long existing disease shall no longer be to the physician the first proclamation of its presence. Advanced science has removed difficulties, minute anatomy has solved problems, improved physiology has explained actions, and matured observation has afforded illustrations which, one and all, will rise in judgment against carelessness in diagnosis, or indifference in treatment. It will be vain to fall back on the convenient phrase, "latency of disease," when unexpected results follow. One who has studied the book of nature transcribes its pages, and offers them to the profession. Hear what he states:—

"The affections of the brain have, I maintain, undoubtedly a premonitory and precursory stage. In *the majority of cases*, the mischief established within the cranium, disorganizing the delicate tissue of the brain, may, *upon careful examination, be detected. There are pathognomonic and diagnostic precursory signs which serve to guide the inquiring, diligent, observant, and intelligent eye of the practical physician, and enable him, with some degree of certainty, to discover the first scintillations of brain disease*, even when the patient and those about him repudiate all idea of cerebral ill health, and refuse to acknowledge the necessity for medical advice or treatment."—[The italics are ours.]

In the "*majority*" of cases—why not in all? We have to some extent premised grounds for the answer in our contrast of the relative facility of diagnosis, which separate classes of affections afford. Another cause must not be forgotten. Material indications of an existing intercranial disease may be wanting. The peculiar physiological actions and anatomical relations of the cerebral mass afford explanations of this. These actions and relations are adequate to account for the non-detection of disease up to a certain period, if so situated that the

active organism is not affected by its presence. They fail if advanced as arguments to vindicate the assertion that complete non-discovery of such affections, is not, except in solitary and exceptional cases, due to imperfect powers of diagnosis on the part of the physician. Dr Winslow sets forth in the most unmistakable manner the explanations which anatomy affords.

"The encephalon, although admitted to be the material instrument of the mind, the seat and fountain-head of sensation, the organ which takes cognizance of impressions, made either upon the peripheral extremities of the nerves, remote from the encephalon, or of those conveyed through the special senses directly to the sensorial ganglia, is, when in a state of health, insensible to any kind of stimulus, or even laceration of its substance. The brain, whilst destined to perceive acutely the painful impressions of other organs, is itself not conscious, in the incipient stage of disease, of the lesions of its own structure. Its sensibility, however, becomes most acute when its structure is diseased. Large portions of the hemispherical ganglia have been removed by the knife, and have even sloughed away without giving rise to any appreciable disturbance of cerebral phenomena, pain, or obvious inconvenience; but any injury, however slight, inflicted upon the *sensorial ganglia*, whether the result of a morbid process, or of artificial irritation, is invariably followed by great cerebral disorder, and unequivocal disturbance of their special functions. The physiological physician has no difficulty in predicating the immediate effect of an alteration in the structure of, or mechanical pressure upon, the *thalami optici*, *pons varolii*, *corpora quadrigemina*, or *medulla oblongata*. The functions, as well as pathology of these and other ganglia, are well ascertained and fully established."

It is unnecessary to elaborate these points. In discussing experience of vital actions, it is but fair to our readers to presume their complete acquaintance with admitted anatomical relations and physiological laws. With this knowledge it is important to trace the relation between recognised phenomena in life and ascertained conditions after death. Pathology is thus constituted the handmaid of Medicine, not her mistress. In the premonitory stage of insanity, observation has shown that the gray portion of the hemispherical ganglia is frequently in a state of capillary congestion. The importance of this pathological condition, in its association with peculiar psychical phenomena, must not be forgotten. Acting with and being reacted on by a known mental state, its value as an indication for the purposes of cure will be apparent when the subject of medical treatment comes under discussion.

Thus far have we accompanied Dr. Winslow throughout the valuable Essay which constitutes his introductory chapter. En-

larged, comprehensive views have therein found expression in graphic generalizations, which psychologists might with safety adopt as indisputable aphorisms. Before proceeding, as we are invited, to investigate in detail the general character of the premonitory symptoms of encephalic and mental disease, it is desirable for us to transcribe the order in which the analysis of so important a subject is proposed. The comprehensive character of the work will thus be rendered apparent. This volume, however, it may be premised, is but part of a promised whole. A succeeding volume, the author declares, is set apart for the consideration of specific types of brain disease, in which, from the nature of the subject treated, details will be more elaborate, especially in pointing out, as far as practicable, the diagnostic premonitory signs of the various organic affections of the encephalon.

The arrangement proposed is as follows:—

1. Morbid Phenomena of Intelligence.
2. Morbid States of Motion.
3. Morbid Conditions of Sensation.

This classification is adopted as fully recognising the three physiological functions of the cerebro-spinal system, viz.:—

α. Thought. *β. Motion.* *γ. Sensation.*

4. Morbid Phenomena of the Special Senses.

δ. Sight. *η. Touch.*
ε. Hearing. *θ. Smell.*
ζ. Taste.

5. Morbid Phenomena of Sleep and Dreaming.
6. Morbid Phenomena of Organic or Nutritive Life.

α. Digestion and Assimilation. *γ. Respiration.*
β. Circulation. *δ. Generation.*

7. General Principles of Pathology, Treatment, and Prophylaxis."

In discussing *Morbid Phenomena of Intelligence*, psychical operations are, for practical purposes, investigated in their physical relations. Metaphysics for the time give way to Medicine. Without entering at length on the question as to how or why the encephalon acts as the medium through which the mind manifests its varied powers, Dr. Winslow affirms as a general *postulate*—

"That all structural lesions of the encephalon, its investing membranes, and blood-vessels, are associated with some derangement,

modification, or altered action of the *psychical*, *motorial*, or *sensorial* functions of the great cerebral ganglion (*πρῶτον Αισθήτηριον*) the *sensorium commune*."

It may be urged, this premise begs the question, and is refuted by cases on record, in which it has been affirmed that "serious injury has been done to the brain during life, without damaging the intelligence; and considerable encephalic disorganization, as the result of disease, has taken place,—no aberration, exaltation, depression, or impairment of the mind having been observed previously to death." Admit these illustrations. Dr. Winslow brings them forward as we have quoted. Do they render the postulate vicious? We apprehend not. Let us investigate their value. Seeking by induction to establish the position thus assumed, we are driven to anatomy and physiology for corroboration. Adopting, without prejudice to the argument, the affirmative proofs these supply, which we contend are sufficient, it is still urged that the cases quoted overturn the universal conclusion on which this postulate rests. This would be true, were we arguing abstract, immaterial propositions. In this case, however, the question being one of *physical* relations in their widest sense, exceptions restrict, but do not overturn or set aside the conclusion adopted. For the purposes of *practical truth*, the postulate, therefore, remains unaffected, and acquires additional force, if the exceptional cases by having their characters defined be brought to prove the rule. Recalling our previous observations in reference to the anatomico-physiological character of the nervous centre, we find these exceptional cases provided for, and are satisfied that they are of a rare and particular character; that the alteration of structure which they presented either was confined to one cerebral hemisphere, or restricted to the fibrous or conducting part of the nervous structure, while the injuries or disease have, in the cases relied on, been isolated from contact with the vesicular matter, or those ganglionic centres from which motion and sensation are believed to proceed, or at least to find expression. We have dwelt on this question, because it is generally raised by those who affect to treat diseases of the mind as a hap-hazard study, to which the ordinary principles of medicine are inapplicable. It is time that so grave an error should be for ever exploded.

Adopting, then, as a logical truth, this postulate, and bearing in mind the nature of the exceptions just discussed, we are prepared for Dr. Winslow's following observation:— "I affirm, that in every case of disease of the encephalon, particularly if the organic change or pressure be established in

the vesicular matter, or in the membranes immediately investing the brain, a disordered or abnormal state of cerebro-psychical phenomena may, in the incipient stage, on careful examination, be detected."

Whether this affirmation is hereafter sustained, the reader will have to determine, when the physical evidences come under discussion. We have little apprehension on the matter. For the present, we are led to the consideration of the psychical section of the subject.

The morbid manifestations of mind to which the physician's attention is attracted are, according to Dr. Winslow's experience, conditions either of *exaltation*, *depression*, *aberration*, *or impairment.* The phases which these several states assume involve the entire question of mental derangement.

"In analyzing their precursory symptoms, it will be important to remember, that the earliest signs of appreciable deviation from mental health often resemble, in a remarkable degree, temporary and transient exaggerations of natural and healthy conditions or states of mind, the first symptoms of the psychical affection being recognised by certain marked deviations from ordinary phases of *thought*, and normal modes of action *or conduct.*"

"Ordinary phases of thought, and normal modes of action or conduct"—What does their estimate require? On the one hand, that the physician determine the relation they bear to a general standard of sense and morality; on the other, that he investigate, with careful and anxious study, each individual case in its presenting symptoms and previous history, in order that he may be enabled to contrast what is with what has been, and so establish whether the indications present are or are not those habitually manifested.

An inquiry into *the premonitory symptoms of insanity* opens most abstruse and difficult questions, which Dr. Winslow believes may be resolved into—

1. The present limited knowledge of the physiology of the nervous system, and the ignorance of the phenomena of mind and life.
2. Analogy between insanity and dreaming.
3. State of the mind when passing into a condition of alienation, as deduced from the written confessions of patients after recovery.
4. Morbid phenomena of thought, as manifested during the states of transition, and convalescence from attacks of insanity.

Here are four philosophical *points d'appui*, which, it is affirmed, if elaborately and faithfully investigated, will afford a clearer insight into morbid psychical phenomena, hitherto deemed obscure, if not altogether inexplicable. But on the very threshold of the inquiry, what a host of interrogatories present themselves!

What is Insanity? We would ask, with Dr. Winslow,

"Is its nature known; its essence discovered; the laws governing its phenomena understood? What is the constitution of its *materies morbi;* the exact condition of the moral and intellectual faculties, emotions, instincts, or passions, during the 'mind's own revolt upon itself'? In what does mental derangement consist? Is it an affection of the moral, intellectual, emotional, or perceptive faculties; and are the reason, judgment, comparison, and imagination most implicated in the malady? Is there a type of insanity manifesting itself, more in *conduct* than in the *ideas?* What is the nature—where the seat of the alienation of mind? In which of the mental faculties does the disease commence its ravages; and where is the precise position in the brain of the latent nidus or germ? Has insanity a *centrifugal* or a *centripetal*, a subjective or an objective origin? Is insanity an affection of the mind *per se?* Has the disease a psychical or a somatic origin? Is it possible for thought, in the abstract, to be diseased, independently of images occupying the consciousness? Does alienation of mind depend, not exclusively upon a psychical or somatic cause, but upon a disturbance in the normal *relations* existing (in states of cerebral and mental health), between the mental and physical functions of the brain?"

Why is it not permitted man to raise the veil enveloping the temple wherein is shrined this mystery of mysteries—the human mind? Baffled curiosity in vain would solve problems over which philosophy has grown old. We speak of mind in its diseased manifestations occupying our attention: how little do we know of its abstract or essential nature! Well may Dr. Winslow inquire—

"Have we any knowledge of its *nature*, clue to its *seat*, accurate idea as to its mode of *action*, or anything approximating to a right conception of its essence? What," further to use his words, "are the modifications, the metamorphosis, organic or functional, which the vital principle and nerve force undergo during their passage through the exquisitely organized and highly vascular cineritious or vesicular brain structure? How does the occult mental principle, believed by physiologists to be evolved or eliminated in the *grey* matter of the brain, become so mysteriously and marvellously changed from *nerve* to *mental* force, and *vice versâ*, in the hemispherical ganglia? Is the development of psychical phenomena the result of what is termed a correlation of the two preceding

modes of dynamical action; or, is the mind a new creation, essences, principle, or power organized or elaborated in the vesicular portion, of the cerebral mass? What is the nature of the *vis nervosa* of Haller? Is the brain a galvanic battery, and are the nerves constituted for the transmission of impressions like electric wires? Is the mysterious and undefinable 'fluid' or 'force,' circulating in the nerve tubes, a voltaic current—in other words, a principle identical with that of electricity; or one in its essence, origin, and operation, entirely *sui generis?* What is the *vis vitæ*, and how is it associated with and dependent upon organized structures? What are the relations between the intellectual and vital manifestations? What reply can we make to these many and great questions? Are not all these problems of organic and psychical life still, with physiologists, *sub judice?* Have we arrived at any exact knowledge of the substratum of nervous matter? Are we not obliged to confess our ignorance of the ultimate principles of vitality, as well as of intelligence? Do we know anything of their nature or essence? Is not our knowledge of mental, as well as of vital phenomena, entirely confined to an acquaintance with these powers, as *manifested* during life?"

"So far shalt thou go, and no farther"—echoes in our ear when we attempt to question too curiously the mysterious workings of Providence. So it is, because it is so, is the conclusion with which in such inquiries our philosophy must be satisfied. Is there not an infinite wisdom in this? Could man fathom the designs of his Creator, and reduce to material certainty the laws of his being, humanity would array itself against Deity, and confidence in God's goodness be lost. Failing in this knowledge, are we enabled for the practical purposes of life to combat those infirmities incidental to our nature? Who will venture to affirm that we are not? Deductive as well as inductive inquiry; analysis and synthesis of vital operations; a study of the laws which regulate the healthy exercises of the system; a careful observation of the various phenomena of disease, have invested medicine with philosophic certainty, which, while imparting a god-like function to the healing art, bids the physician be patient and watchful, hopeful in the resources within his reach, and not unconscious of the responsibility of his high calling. This uncertainty in theory, this variety of manifestation which appertains to insanity, must not be forgotten.

"Is there," asks Dr. Winslow, "any theory of insanity yet propounded from the bench, taught in the schools, or registered in our text-books, which will bear the test of metaphysical analysis, or stand the ordeal of strict medical or legal criticism?" Hereafter we shall have occasion to recur to this question.

In pursuance of the adopted order of investigation, we are brought to consider if any, and what, analogy exists between insanity and dreaming.

Sir W. Hamilton has accurately described the transitional state of mind between sleeping and waking. It will be found to correspond closely with the condition of the intellect during the stage of incubation, when the mind, losing its sane consciousness of objects, approaches the confines of mental alienation. When roused from the transitional state (intermediate between sleeping and waking), "we find," says Sir W. Hamilton, "ourselves conscious of being in the commencement of a dream; the mind is occupied with a train of thought, and this train we are still able to follow out to a point where it connects itself with certain actual perceptions. We can still trace imagination to sense, and show how, departing from the last sensible impressions of real objects, the fancy proceeds in its work of distorting, falsifying, and perplexing these, in order to construct out of their ruins its own grotesque edifices."

"In dreaming," writes Dr. Winslow, "the mind is occupied with the incongruous and fantastic combinations of images so characteristic of many conditions of disordered intellect. There is also a similar want in the coherence of ideas, one conception following another, and this succeeded rapidly by a *series* of mental impressions, in opposition to all the legitimate laws governing associated thought. There is also a complete paralysis of the will over subjective phenomena, this faculty exercising no controlling influence over the train of suggested ideas. In the act of dreaming, the most trivial circumstances give a decided character and direction to the current thought."

These curious phases in psycho-somatic life have occupied the attention of the most distinguished reasoners of the day. It is vain to attempt to fathom this mystery. Observation of the psycho-physical circumstances which attend their development, is the utmost philosophy has been satisfied to adopt. The restless activity of the mind, its apparent independence of physical volition—or, if not independence, its capability of action while the physical system is placed in abeyance, and for the time completely excluded from participation in its exercises—is convincingly illustrative of a special mental power. Analogous conditions are observed, in which the waking physical system of the insane seems to be in a state of active somnambulism, responsive to the dictates of the inner mind, and apparently indifferent to the obligations of the outer world. The compression of the events of years into the sleep of an hour—aye, even of minutes; the accession of thought on thought till ingenuity exhausts speculation; the influence which cer-

tain material agencies or physical conditions have been perceived to exercise on the character of the conceptions suggested to the dreamy consciousness in health, closely resemble those automatic operations of the intellect observed in insanity. Does the analogy stop here? We apprehend not. As there are dreams in which the mind wanders in Egeria, and the fancy holds revel in gardens of delight; nights in which horrors on horrors accumulate, from which to wake is more than joy, to return in a moment to the world, and be conscious that we have but slept,—so likewise there are conditions and cases of insanity, of long duration, and apparently of a chronic character, in which the brightness of returning reason has in a moment dissipated long unconscious gloom, and the mind has been known suddenly to be restored to its sovereignty, not only during the course of the malady, but immediately before death. How is this? Who can explain this mysterious influence; who can measure mind by material atoms; who can weigh in the scale of human sense these inexplicable operations of infinite wisdom? These things are, nevertheless, written for our learning. Let us profit by the instruction offered, receive the information they give, and be content to know, there is much which must ever remain unknown.

A careful reading of the chapters devoted to the consideration of the *confessions of patients after recovering from insanity*, and the investigation of *their states of mind when so recovering*, will unfold, in sad detail, the several variations of mental consciousness, from the incipient, solitary, unsuspected symptom which indicated the earliest deviation from healthy thought, to the ultimate aggregation of unmistakable derangement, completely perverting and overwhelming the intelligence. In these may be witnessed the strivings of the spirit with itself. One patient, after her recovery, writes, in reference to the commencement of her attack: "I was quite conscious that my mind must be affected, and yet no delusion had taken possession of my intellect." Another details his physical prostration, associated with a great weariness of life, and intense longing for death, existing for several weeks without intermission, unaccompanied by delusion of any kind. A third relates the successive steps by which an impression, known to be delusive, at length acquired complete ascendancy. A clergyman, remarkable for meekness of disposition, and purity of thought, is shown to have suffered beneath the influence of "*double* consciousness," an evil and good spirit contending for mastery. A fifth recalls a condition of persistent mental strivings, interrupted by flashes of irresistible impulse. A sixth, with melancholy

precision, traces in lengthened minuteness, stereotyped with truth, contentions between mental and moral faculties, through which madness acquired method, and what mankind would term "vice," found a morbid disguise. A lady writes confidently of her experience while disease was impending, and referring to the impressions then prevailing, adds: "These circumstances justify me in affirming that the lunatic fancies he sees and hears objects which have no real existence." That is to say, not only to the mind's eye are the false creations alone presented, not only do the insane mistake, pervert, or miscomprehend real existence; but they create them under the influence of their disease, and are governed by them according to the tendency which it assumes. Why do we cursorily allude to subjects which individually would demand separate essays? It is that we may express our belief that their study, as set forth, will of itself constitute a valuable experience.

We have said that, in some cases, reason is suddenly restored. In the majority of instances "the mind appears gradually and almost imperceptibly to awaken, as it were out of a fantastic and fairy-like dream, into a healthy state of consciousness." Patients have described that, during their recovery, they felt the delusions gradually loosing their hold upon their fancy; that they then began to entertain doubts as to their reality, and felt disposed to listen patiently to the judicious advice of their physician, and no longer to be irritated at being told that their perceptions were false, and began to appreciate the absurdities of other patients. Others have affirmed that, during the whole of their illness they always fancied that they were surrounded by a dark cloud, and could never perceive any difference between day and night; and that they dated the commencement of their recovery from the time when this mysterious darkness began gradually to fade away. Some admit the benefit they derived from the use of remedies, and recognise the mutual relations of mental and bodily health as having been experienced throughout their suffering; others repudiate the influence of any medical process whatsoever. How far treatment, and of what nature, was available in either case, is dispassionately stated.

In the ordinary practice of medicine, notwithstanding the facilities we possess for instituting analysis, as Dr. Winslow well observes—

"We occasionally meet with cases of *bodily* disease which are at variance with past experience and *à priori* notions, which set at defiance preconceived views of morbid physical phenomena, which resist every attempt to embody them within the nosological chart,

and repudiate all reduction to any of the acknowledged orthodox pathological standards or tests. These affections are anomalous or *pseudo* in their character, are with difficulty defined, not easily diagnosed, occasionally escape observation altogether, and often resist, too successfully, the operation of the best directed remedial measures."

This being so, it must be readily conceded that, bearing in mind the physical differences which distinguish their organic relations in the subtle, complicated, varied, and often obscure affections of the cerebral structure, deranging the operations of thought, we should have brought within the sphere of our observation extraordinary, anomalous, and eccentric deviations from certain predetermined, morbid, cerebral, and psychical conditions. In the treatment or investigation of ordinary physical disease, it is seldom that difficulty is experienced in ascertaining with reliable accuracy the previous history of the case. In the majority of cases of insanity, the origin of the affection is generally most obscure. There are no means of determining when were manifested the first inroads and dawnings of morbid and insane perception, of demonstrating when the boundary line between healthy and disordered idea was traversed; at what precise period certain normal states of eccentricity of *thought*, singularity and *oddity* of *conduct* passed into actual insanity. The reason of this, as we have in a measure premised, is the absence of any psychical test, to which with safety and satisfaction, judicially and psychologically, appeal may be made; when difficult, doubtful, obscure, and subtle conditions of suspected mental disorder are submitted for medical, metaphysical, and legal analysis. The consequent necessity for each case being examined by, and in *relation to*, *itself*, "may, in a measure, explain the difference of opinion, as well as unhappy conflict of testimony exhibited in courts of law by medical men supposed to be conversant with the phenomena of disordered mind." Neither age, sex, nor condition being exempt from the visitations of this disease, it follows that extraordinary diversity in its morbid manifestations, which are but too frequently a *diseased excess* in the development of normal healthy mental functions, must be observable.

Here it is well particularly to direct attention to the difference Dr. Winslow maintains between disordered and insane states:—

"I presume it to be a generally admitted axiom, that the mind may be *disordered* without being *insane*, using this phrase in its

strictly legal acceptation. These conditions of morbid intellect may he considered by some as only degrees of *insanity;* but I would suggest, that this term be restricted to those mental disorders accompanied with positive loss of control, clearly justifying the exercise of moral restraint, and to those morbid conditions of the intellect which sanction an appeal to the protective influence of the law. In other words, I would confine my remarks to those cases in which the mind may be said to be *pathologically* disordered, but not invariably *legally* insane."

The great value of this distinction will be shortly apparent. At the commencement of insanity, the derangement of the intellect may be so slight and transient in its manifestations as to render its recognition as a formidable malady impending over the patient, a task of grave doubt and great difficulty. To the unskilled, untried, and untrained eye—and it not unfrequently happens that to such it is first submitted—the disease is occasionally in its early stages altogether invisible. To the practised apprehension of the experienced physician, it is almost undiscernible, or, at least, of a dubious and uncertain character.

It is not our intention to discuss these anomalous mental conditions in detail, implicating, as they do, the affections, propensities, appetites, and moral sense. Dr. Winslow, if he does not exhaust the subject, at least leaves no feature, sign, or character unnoticed, by which the type may be recognised—a type of morbid mental disorder which, we have his sad experience for saying, "exists to a frightful extent in real life." We cannot, however, leave this important part of the subject without observing that the illustrations brought forward, their termination and treatment affording melancholy examples of the terrible nature of this subtle and insidious disease, are at the same time fraught with the comforting assurance that the psychological physician, who, to a practical knowledge of human nature, adds an acquaintance with the higher departments of mental and moral philosophy, as well as cerebral pathology, may, through an overruling Providence, be the instrument of preventing much of the bitterness, misery, and wretchedness so often witnessed in the bosom of families, arising from concealed and undetected mental alienation.

When it becomes requisite, either for the purposes of justice, in the establishing and punishment of crime, or the vindication of civil right in the distribution of property, that judicial investigation be instituted into the responsibility on the one hand, or the capability on the other, which appertains to morbid mental conditions; Psychology, in the witness-box, is

put upon its trial. Then not unfrequently arises a curious play of intelligence and experience, when men of established reputations deliver opinions at variance with each other. In the first instance, the requirements of law are apparently brought into conflict with the dictates of humanity; in the second, the rights of property are imperilled through the uncertainty of medicine. Society would not be safe were not justice a jealous mistress, as well as a benign protectress. The fearful results, the sad consequences of crime, impose upon juries a terrible responsibility when the plea of insanity seeks to shield the criminal from the legal penalties attaching to his act. "The annals of our courts of law establish beyond a doubt that the criminal and homicidal lunatic almost invariably belongs to the class of quiet, cunning, subtle, clever, and what Esquirol terms, "reasoning madmen." Under such circumstances the psychological expert is rightly subjected to the severest scrutiny. In the majority of criminal cases the lunatic, although suffering from a dangerous and homicidal form of mental derangement, manifests during his trial such an amount of self-possession and control over his disordered thoughts as seems altogether inconsistent with the plea of irresponsibility. We have heard an unhappy creature on his trial for cutting the throat of his wife, to whom he was fondly attached, use every exertion to persuade the jury that at the time he was completely sane, and endeavour, with strange cunning, to divert from himself the suspicion of the act. In this instance the sad tragedy had followed on the premature discharge from a lunatic asylum of the "convalescent" prisoner, and the plea found the approval of the Court. Such, however, is not always the case. Judges, of great personal humanity and vast legal learning, have at times permitted their keen desire to uphold the insufficient, incomplete, dangerous, and unsatisfactory dogma of the law, in reference to this question, to prevail over their better judgment. "Experts in madness! mad doctors!" are terms the Bench has not blushed to use offensively. Is justice deaf as well as blind, that the voice of humanity may not influence the obligation of law? We would fain hope not. Her sword being drawn to save as well as smite, thrice privileged is he whose wisdom can direct its blade. This in many instances can only be done by the aid of so-called "experts in madness." Time has happily passed since vulgar superstition invested cerebral disease with demoniac significance. Surely the subtleties of the learned must not be permitted to replace the prejudices of the ignorant. "Conflicting medical testimony," when human life trembles in the scale, is a sad thing to witness. The

public, whose imperfect acquaintance with the nature of inexact science unfits them for forming reliable opinions, lose confidence in medical truth. Charlatanry thereby flourishes. Why is this so frequently the case? It is, we affirm, because medical men, without sufficient experience on special subjects, honestly, but most erroneously, believe, that the general principles of their science enable them to give reliable judgments on a combination of facts in which, it may be, there is a complete subversion of all that are vaguely termed "established rules." In insanity, more especially, the opinion of one who, to experience on the particular subject, brings a philosophic mind for the investigation of a difficult case, should outweigh a whole theatre of others. Dr. Winslow, than whom no higher authority can be found, well argues the question.

"We have recourse to able, skilled, and scientific witnesses to elucidate difficult and disputed points in engineering, architecture, mechanics, navigation, feigned writing, chemistry, and many of the exact, as well as speculative sciences, and upon what ground should we repudiate the testimony of learned and experienced men, practically acquainted with the phenomena of insanity?"

Who would think of publicly throwing discredit upon the well and deliberately considered opinions of a Faraday, a Brande, or a Graham, on some vexed and subtle question of analytical chemistry? Who would have thought of preferring to the opinions of Stephenson or Brunel, giant minds, now, alas! no longer amongst us, the dogmatic "experience" of some Brown or Jones, in matters where practical acquaintance with art was justly considered essential? Out on those who presume to value life or character as of less importance than matters of money speculation! But it is argued by many, that the indications of insanity and vice are in numerous instances identical, and the question is thus limited to the abstract investigation of physical health. This grave error has proved a fruitful source of calamity. It is right and proper that personal liberty should have the utmost license; it would be dangerous to society were it otherwise. The law affords protection from the personal injury resulting from natural irritability, violence, or passion, coarseness or brutality, vicious inclinations, criminal propensities, excessive caprice, or extravagance of conduct. Unless, therefore, these could be clearly demonstrated to be *morbid results*, and positive and clearly established deviations from cerebral or mental health, justice should be vindicated. In the absence of material proof, what is to guide opinion? Here the analogies of medicine supply the answer. In many vis

ceral affections manifestations of derangement of function are not always accompanied by *appreciable* organic alteration, and yet, from the order of development, succession, mode of combination, and degree of prominence of symptoms in their relation and co-relation, EXPERIENCE is available for practical truth in diagnosis. This, we submit, is sufficient refutation of the assertion, that the opinions of psychological experts should be lightly estimated.

The singular inconsistencies which mark the verdicts of juries, in reference to the question of mental responsibility, are deserving of a moment's investigation. In the case of suicide, oddness of manner and depression of spirits are generally sufficient to procure a verdict of "temporary insanity." The same jury—impannelled to try a similar issue before another tribunal, the question raised not being the insanity of the self-murderer, but the soundness and capacity of a person to manage himself and his property—will perseveringly refuse to recognise the existence of insanity and incapacity, even if established by the clearest and most conclusive medical and general testimony. One being a completed and terminated interest, resting in and revolving round the diseased; the other a continuing and vested interest in present use and future operation, may, in a measure, account for this. Would that juries could be brought to know, and taught to believe, that "personal liberty" is a much-abused term, too frequently in medico-legal investigations confounded with the wild license of insanity, which, in reckless expenditure, profligate dissipation, or ruinous speculation, consumes the resources of a too-affectionate family, who, unless well-advised to the contrary, continue uncomplaining victims of the malady. To medical witnesses, who may, in the discharge of their professional duties, be called to give evidence in courts of justice, we would say, "Be just, and fear not." Despise popular favour if it clashes with honest conviction. The cause of humanity is the cause of truth, though on criminal trials life be the penalty of its enunciation. To vindicate this, may be to adopt an unpopular, nay, an invidious course. Duty, when called on, leaves no alternative to the physician but to state how far the talents committed to his charge have profited him.

"If," to adopt Dr. Winslow's observation, "he forms a just estimate of his position as a lover and cultivator of science, and possesses a philosophic appreciation of his responsible vocation as a citizen of the state, physician, and medical jurist, and is resolved not to yield one inch of ground in his honest exposition of scientific truth in deference to popular fallacy, or in slavish obedience to

ignorant abuse and noisy clamour, he must expect to pay the penalties attaching to his exhibition of moral courage, and firm and unflinching adherence to the path of public and professional duty. He may be maligned, misrepresented, and traduced for adopting this honourable principle of conduct, but the cause he has espoused must eventually triumph over all difficulties temporarily obstructing its steady, onward, and advancing progress."

The stage of consciousness which either precedes the manifestation of, or indicates the recovery from, an insane condition of mind, portrays curious and deeply interesting phases of intellectual actions and reactions, to which Dr. Winslow, with melancholy precision, affords the clue.

"Among the obscure, and, as yet, inexplicable phenomena of disordered intellect, stands prominently forward a condition, incipient phase, or pre-existing abnormal state, in which the patient (long before he becomes or is considered actually insane) is fully sensible, painfully, keenly, and exquisitely conscious of the predominance of certain morbid and unnatural states of emotion, idea, and impulse."

It is at this stage that the sagacious psychologist is powerful to arrest the further progress of the malady.

"For a considerable period before the mind has lost its equilibrium, or is appreciably disordered, the patient admits that he is under the influence of certain vague apprehensions, undefinable misgivings, and anxious suspicions, as to the sane character of his emotions, healthy condition of his ideas, and normal state of his instincts."

The mind thus reverting upon itself sits arbitrator of its own destiny. Reason struggles to maintain her throne against the wild images of disordering fancy, or the soft blandishments of distempered passion. The consciousness of what is, the apprehension of what is to be, occasion a perpetual conflict of morbidly disturbed thought, the distress of which to the parties is inconceivably great, the evidence of which to the physician is almost inexplicably involved. "Almost"—let it not be written altogether. Such cases in their diagnosis manifest the god-like functions of the healing art, by which, through physical and moral interposition, man is enabled to recall to fidelity and firmness wavering rationality, and to fortify the mind against those terrible dangers most in apprehension. Who that has had an opportunity of studying mental disease will fail to recognise the truthfulness of the numerous illustrations Dr. Winslow presents?—illustrations which

must be regarded as text-books of the conditions they delineate.

While a contest of this character disturbs the unhealthy, but not yet insane mind, the wretched sufferer may for a long period be alone conscious of its existence. The mind—harassed and bewildered by odd notions, unusual feelings, unnatural trains of thought, strange inclinations, intense irritability, unequal powers of attention, confused, irregular, painful, disturbed, and, sometimes, ludicrous association of ideas,—may yet endeavour to pursue regularly ordinary occupations. While these unhealthy feelings are forcing an entrance, and trying to obtain a settlement, the patient may frequent places of amusement, and mix daily with his family and friends, and appear to those about him in good mental health, and to act like a rational man. By heroic efforts he may be able to dissipate and dislodge those morbid scintillations of insanity, or, when this cannot be accomplished, to so studiously, artfully, and ingeniously conceal their existence, that he effectually masks from others the disordered condition of his intellect; and yet, this agonizing consciousness of the presence of morbid and insane ideas, this painful recognition of the first approaches and foreshadowings of insanity, may, from their acuteness, be at the time inducing mental misery so crushing and overwhelming, that self-immolation is contemplated as the only relief from the terrible sufferings they occasion. It would divest this sad affliction of much of its wretchedness did the gentler and better feelings ever gain the ascendancy. When reason wavers, humanity too often prevails, and sinful nature too frequently stands proclaimed in its full and undisguised deformity. The instincts, the coarser parts of animal nature, make a bold, determined, and vigorous effort to forcibly seize the sceptre, and to exercise supreme authority and despotic dominion over man's "sovereign reason." Their success is, in many instances, sadly apparent. The whole tenor of a well-regulated life, a disciplined morality, and chastened affection, seems degraded, perverted, and alienated from all principles of purity, to be held captive by the animal impulse, and to find utterance in expression or gesture altogether irreconcilable with, or explicable by, previous association, habit, or thought.

A gentleman of great accomplishments, of high order of intellect, of known literary reputation, and of admitted personal worth, who had his mind for years tortured with morbid suggestions to utter obscene and blasphemous expressions, thanked God he had never once yielded to them; and, although

a Christian in principle, "he felt he was not sinning against God by committing self-destruction, with the object of effectually destroying all chance of his giving utterance to thought that might contaminate the minds and morals of others." A lady writes—"Would that I could cease to think of the horrible suggestions of my exquisitely sensitive nature and terribly diseased imagination! I cannot sustain this state of mind long. I have a nervous horror of death, and yet I sigh for destruction." Bishop Butler records that he was all his life struggling against horrible morbid suggestions, "devilish," which, he says, would have maddened him if he had relaxed the stern wakefulness of his reason for a single moment. Would that "stern wakefulness" always could prevail! Alas! it does not. Religion, piety, truth, virtue, the fear of God, the love for man, alike succumb before the ravages of disease. In men it then happens that a painful recognition that insane conceptions are struggling to master reason, to obtain an ascendancy over judgment, an abnormal influence and control over passion, is inadequate to control the impulse to commit suicide, and even to sacrifice the lives of those relations round whom, in health, the affections were most entwined; as well as to prevent their tongues from giving utterance to blasphemous, revolting, and impure expressions, from the contemplation of which, in health, they would instinctively have shrunk with horror, loathing, and disgust.

In women, it may be that such a singularly distressing perversion of thought indicates a morbidly exalted state of the reproductive instincts. This condition is feelingly and beautifully expressed by Dr. Winslow, when he observes:—

"The conversation is, in these cases, occasionally tinctured with expressions, from the utterance of which the unhappy sufferer would, like a sensitive plant, have recoiled when in health. The gentlest of the sex, the purest and most delicate of feminine minds, pious, refined, and cultivated of moral natures, are often the first to exhibit, when suffering from particular types of mental derangement, this painful moral and physical degeneration. Such melancholy manifestations of poor human nature, fallen, crushed, perverted, and often destroyed by disease, suggest to the man of the world, medico-psychologist, theologian, and moralist, sources of deep and profound thought and subject for grave philosophical meditation. It is, however, consolatory to reflect that the mind may pass through this terrible and mysterious phase of alienation intact, emerging from the fiery furnace without the slightest remnant of moral taint, injury, or contamination! How it is that

'Thoughts impure
May pass through minds of angels and of man,
And leave no stain.'"

All practical physicians have witnessed cases of this character, and have doubtless asked themselves the question, How can the pure, delicate, and unsophisticated mind manifest an accurate acquaintance, not only with the most corrupt ideas, but with improper phrases ordinarily used by the most depraved street-walkers? Several explanations have been offered of these phenomena. Men with large sensuality and little intelligence have, we grieve to say, to the complete degradation of themselves, not their profession, associated the development of this form of disease with ungratified sexual desire. This doctrine has, happily, found expression amongst the exceptional few. Those, however, who approach this consideration with refined morality and a high appreciation of medical philosophy —who, with large and varied experience, can penetrate the surface of disease—do and will believe, with Dr. Winslow, that these sad manifestations of perverted and disordered instincts are susceptible of the subjoined explanations.

In the first place, we are bound to consider the orthodox scriptural doctrine of the *innate* corruption and *natural* depravity of the human heart. It is written, "*The heart is deceitful above all things, and desperately wicked. Who can know it?*" "*Out of the heart proceed evil thoughts, murders, adulteries, fornications, thefts, false witness, blasphemies.*"

"As long as reason reigns supreme, and is unclouded by disease, and whilst the will retains its normal and healthy sovereignty over the higher faculties of the mind, and its control of the instincts, the natural tendency that exists towards evil thoughts and vicious actions is kept by man's own efforts, aided, if not, happily, by Divine grace, by exalted moral considerations, in a state of subjugation; but, contemporaneously with a paralysis of the co-ordinating principle (the *executive* element of mind), and perversion of the reasoning faculty, caused by some type of physical, it may be cerebral disease, does the effect of early training, educational discipline, carefully cultivated habits of thought, strictly considered social companionship, and zealously directed moral and religious influences, cease, alas (in many cases), to restrain the passions, and curb the animal instincts and appetites. Hence, the painful character of the *expressions* almost unconsciously used by some young women when insane."

These observations apply to the results of *diseased* brain, and *disordered* mind, and further lead to the inquiry whence is derived the original knowledge which thus finds expression? Dr. Winslow believes, and we too acquiesce in this, as in his other opinions, that sources of moral contamination and mental deterioration are in operation, which the most vigilant parents

are not able to detect or guard their children from. The pernicious example and wicked suggestions of depraved, irreligious, and profligate servants, constitute a fruitful source of the moral pollution, as well as mental idiocy, in early life. The perusal of vicious books, and details of indecency in the ordinary channels of information, supply knowledge, which otherwise could never have been attained. These fruitful sources of impurity, which corrupt the fountains of our social happiness, and poison the current of youthful sentiments, demand that society, for its self-preservation, should co-operate to maintain domestic morality by reciprocal confidence, more especially when the character of servants is in question. We reluctantly pass from this deeply important subject to consider the singular perversion of thought and curious nature of illusions which are occasionally observed to precede insanity. These suggest an examination of those peculiar attributes which spiritual media are affirmed to possess. We forbear at present from entering on a scrutiny, for the institution of which, so vast is its interests, our Number would prove insufficient. We refer to the cases set forth as being well calculated to supply adequate explanation of the essential nature of the mental state prevailing in individuals, who believe themselves to be special objects of the exhibition of supernatural power. Their study will, of necessity, entail the investigation of the laws of psycho-physical sympathy, which embrace many of these apparently inexplicable phenomena, perplexing and puzzling the imperfectly informed community.

In the stage of psychical exaltation which is manifest for some period before the more active symptoms of cerebral disease develop themselves, the patient is observed to be wayward, capricious, passionate, and impulsive. These conditions occasionally alternate with fits of vital depression and mental confusion. Dr. Winslow graphically details these many evidences, which to the physician, more particularly, are indicative of approaching danger :—

"The patient becomes morbidly anxious about trifles; slight ruffles on the surface, and trivial annoyances, occurring in the family circle or during the course of business, worry, flurry, tease, and fret him; nothing satisfying or soothing his mind; and everything, to his distempered fancy, going wrong within the sacred precincts of domestic life. He is quick at fancying affronts, and greatly exaggerates the slightest and most trifling acts of supposed inattention. The least irregularity on the part of the domestics excites, angers, and vexes him. He is suspicious of, and quarrels with his nearest relatives, and mistrusts his best, kindest, and most

faithful friends, often harbouring the most absurd and unfounded misgivings in regard to the purity and fidelity of his wife, attachment and affection of his children."

This sad condition may from the superficial observer find explanations not inconsistent with mental sanity ; and yet it is one of deep significance,—but the beginning of the end. Abnormal excitement is considered only as an unnatural elevation of spirits. Loud dogmatic loquacity, or querulous, peevish, irresolute, and indecisive bickering, may interrupt the enjoyment of the social circle, which, from its previous quiet, becomes the arena of perverted affections, and bitter rancorous aversions towards those who previously were objects of love and confidence, and no suspicion of insanity be entertained. In this state of morbidly active brain and unhealthily excited mind, the fancy runs rampant, taking discursive and airy flights, every circumstance being viewed by the patient *couleur de rose*. As the insanity advances, the patient, in direct opposition to his usual habits and tastes, delights in low society, is neglectful of his personal appearance, drinks stimulants to excess, is extravagant in pecuniary matters, and often squanders his property in visionary and absurd speculations. He subsequently exhibits some form of mental obtuseness or moral obliquity. He is lost to all sense of truth, respect for decency of thought, regard for good breeding, and all notion of decorous conduct. He magnifies, exaggerates, twists, distorts, and falsifies everything connected with himself,—being the hero of every incident mentioned in his hearing. These mental characteristics being generally in direct opposition to the natural or healthy modes of thinking and acting of the individual so affected, may we not inquire why they are not more frequently guarded against? The answer presents itself:—They are, unhappily, but indications, which, while symptomatic of disease, are yet not irreconcilable with a sane, though vicious mind. How much of wretchedness, disgrace, and destitution, might families be spared were physicians capable of taking enlarged views of such cases when brought to their consideration !

The morbid exaltation which, in the inception of mental disease, the intelligence manifests, not unfrequently assumes a more satisfactory, or rather, we should say, a less painful character. The patient frequently exhibits a talent for poetry, mechanics, oratory, and elocution, quite unusual and inconsistent with his education, and opposed to his normal habits of thought. Writers of large experience afford illustrations of the insane, who in art, music, poetry, and song, have manifested a self-acquired and suddenly developed proficiency, which,

like beacon lights, served to render more prominent the surrounding desolation whereupon their intelligence had been wrecked. This phase of mind not unfrequently imparts to the insane a subtlety, quickness of apprehension, ready wit, biting sarcasm, great power of self-control, extreme cunning, and extraordinary shrewdness, which enable them to exercise a wonderful mastery over their acknowledged delusions, whilst under the searching analysis of the ablest and most accomplished advocates of the day. When placed upon his guard, and previously well prepared, the lunatic has been known to baffle every effort of the most sagacious and experienced members of the bar. Their powers in this respect Esquirol has ably set forth ; they are now acknowledged phenomena. Are these unusual exhibitions of mental sagacity—this apparent brightness of intelligence—susceptible of a psychological solution ? Dr. Winslow believes that they are, and proceeds to argue that, as in analogous, though transient, psycho-somatic conditions, accelerated cerebral circulation, and other causes influencing the system, may cause an individual to exhibit increased sensorial activity, so, in this peculiar feature of insanity, similar pathological conditions produce similar results. To the operation of such causes may be added the further fact, that in mental derangement the instinctive appetites, as contradistinguished from the intellectual faculties, are, as a general rule, in a state of activity, exaltation, and ascendancy, which, to a certain extent, may explain the subtle instinctive sagacity and acuteness so frequently associated with the various forms of deranged mind. This explanation—which we regard as closely approximating truth as the subject will admit of—in its psychological aspect is confirmed by the opinion of Dugald Stewart, who, reasoning as a metaphysician, found that the immaterial correlations of mind were of themselves inadequate to explain phenomena proved by experience to be closely related to, and intimately bound up with, cerebro-physical indications.

Somatic exaltation, which, in the incipient stages of insanity, is manifest in a restless state of excitement, extreme perturbation, peevish, irresistible restlessness,—a constant, unwearied, never satisfied desire for change, may be also premonitory of other affections of the great nervous centre, not associated with aberration of the ideas :—

"It frequently," writes Dr. Winslow, "precedes ordinary attacks of *meningitis* and *cerebritis*. It is observed in the affections of the encephalon that occur in childhood, and the symptom is characteristic of those conditions of the brain so commonly associated with attacks of acute as well as of low typhoid fever, producing

great rapidity of the cerebral circulation, depression of the vital, and exhaustion of the nerve force. A state of *mental excitement* is also frequently a precursor of apoplexy. This, with a feeling of "odd sensation," within the head, should ever in predisposed habits be regarded as significant."

As contradistinguished from such a condition, the stage of mental depression, which is evident in many instances, renders the patient mopish, abstracted, moody, and sullen;—acute morbid melancholy, not unfrequently preceding derangement of the perceptive faculties, or the manifestation of mental delusions. This state of mind often leads to suicide. Its recognition becomes of the first importance. Its sorrows are not those of the heart, but of the head; its sympathy should therefore be not the interchange of affection, but the consultation of a physician. Incipient aberration, whether manifest in the intellectual, the perceptive, or the moral faculties, is ever obscure, gradually progressive, subtle, and insidious in its approach.

"At what period," asks Dr. Winslow, "does the exaggerated, false, and eccentric conception traverse the fatal boundary-line separating the *sane* from the *deranged* mind, and become, instead of one erroneous notion, illogical conclusion, error of judgment, mistaken conviction, absurd and extravagant thought, a *bonâ fide* insane *delusion*, a morbid *creation* of the distempered and diseased imagination?"

This question it is easier to put than to answer. In legal investigations it presents startling difficulties. A man has received an offence, perhaps many offences, trifling in their character, which, through a series of mental actions and reactions, at length exercise such pressure on the intellect, that the ideas, from extravagant conceptions, become clearly manifest delusions: in other words, *fixed and settled insane ideas*, which consist not in a creation of the fancy *de novo*, but in a morbid *exaggeration* and insane *perversion* of actually existing circumstances. Favret and Abercrombie, with many other practical writers, have recognised this peculiar condition, of which we are here presented with many examples. It will be obvious that a judicial judgment on cases of this character must be invested with unusual difficulties, where interests conflict with principles which the psychologist, without favour or affection, may be called upon to establish, if not to propound.

The perceptive faculties, in their impairment, mark the precursory stage of cerebral, as well as mental disease, particularly in congestive and inflammatory conditions of the brain and its meninges. Illusions of the senses, as well as delusions

of the mind, are sometimes noticed among the incipient symptoms of acute affections of the encephalon. Bouillaud, Parent Duchâtelet, and Martinet, relate several instances in which perversion of the senses of smell, sight, and touch have preceded inflammation of the brain. Dr. Winslow details similar examples, the peculiarities of which are deserving of close study. This class of premonitory symptoms, indicating to the patient that something unusual is in operation, often by leading him to consult a physician, becomes the means whereby active steps are taken to avert the greater danger of which they are significant. Would that those perversions of the moral sense, which are equally indicative of latent cerebral mischief, were in their development as circumscribed! It is, however, otherwise ordered.

"For some time prior to the development of derangement of mind or disease of the brain, patients have been known (contrary to their usual habits) to indulge in gross sensual excesses, to exhibit states of moral decadence, weakened and paralyzed volition; to be guilty of acts of private and public indecency, dishonesty, debauchery, and beastly intemperance."

How much of heart-rending suffering, of family wretchedness, and individual degradation, might be avoided, had this fact been better understood! The public, in being spared recitals of moral depravity dependant on mental infirmity, would cease to confound the operations of crime and disease. The mawkish sentimentality occasionally evidenced for the one should no longer be apparently upheld by the legitimate sympathy entertained for the other. Medicine, in regulating physical sympathies, and controlling physical influences, would enable the mental to more completely guide the moral power. Disease being recognised, the odium of its exhibition would, it is to be hoped, be more carefully guarded against; while vice, should, at the same time, thereby stand proclaimed in all its naked deformity.

The general weakness of mind, evidenced long anteriorly to any serious disorder of the brain being diagnosed, or even suspected, is in many of its features analogous to the torpor of mind that so frequently supervenes upon acute forms of bodily disease, particularly those of febrile character implicating the nervous functions. The patient is himself painfully conscious of feeling mentally *below par*, and recognises his inability to use efficiently his powers of mind. This morbid condition of intellect, while being generally associated with, and, in a great measure, dependent upon a depressed, debilitated, and exhausted state of the vital and nerve force, is occasionally pre-

cursory of formidable attacks of organic disease of the brain, and is to be viewed, in some cases, as pathognomonic of the existence of cerebral tumours, softening, abscess, induration, and other formidable types of encephalic disorganization. Dr. Winslow believes that serious fatal structural disease of brain may occasionally be preceded *by no other symptom than loss of mental power.*

"It is," he observes, "occasionally the duty of the physician to see and prescribe for such cases. They often, alas! baffle his best and most assiduous attempts at cure. Occasionally, however, it is his pleasure to realize the beneficial effect of continuity of remedial treatment in restoring the mind to its original vigour; and that, too, in cases often justifying apprehensions of the most unfavourable termination."

The serious consequences which may result from the existence of this form of affection are well illustrated by the cases detailed. Their perusal will, doubtless, recall instances where commercial ruin and social disgrace might have been prevented by the timely interposition of medicine rather than remonstrance. This general weakness of mind is closely associated with a feeble state of the power of attention, whose morbid phenomena Dr. Winslow discusses at length. "The difference," says Sir W. Hamilton, "between an ordinary mind and the mind of Newton consists principally in this, that the one is capable of the application of a more continuous attention than the other." Attention, writes Dr. Chalmers, "forms the great link between the intellectual and moral department of our nature, or between the percipient, and what has been named the pathemic departments. It is the control which the will has over this faculty that makes man responsible for the objects which he chooses to entertain, and so responsible for the emotions which pathologically result from them." Adopting this proposition, we are presented with conclusive arguments wherewith to combat the doctrine that responsibility attaches to actions performed, pending the influence which disease exercises.

An incapacity to control and direct the faculty of attention not unfrequently marks the early stage of cerebral affections. The link ceases to be of use for the healthy purposes it has been wont to determine. A mental incapacity to justly guide moral impressions may coexist with a certain capability for recognition of indifferent matters, in the consideration of which the active affections have no part; and thus a man be apparently sane, at a period when, it may be, he is open to solicitation to violate the whole previous tenor of his life, and frustrate in-

tentions he long had cherished, by some iniquitous disposition of property, expressed in terms submitted for his approval, which, if within his comprehension, are beyond his resistance.

Dr. Winslow's observations on this condition of mind cannot be too carefully studied. More especially would we direct attention to his remarks in reference to those psycho-somatic conditions hypochondriasis presents, as affording the true solution of phenomena, than which none more distressing present themselves. This disease, in its primitive nature, essentially a morbid concentration of the thoughts to, and consequent exaggeration of, organic conditions of physical sensibility, resulting often from slight bodily ailments, which eventually assume, in the distempered and deluded imagination of the hypochondriac, a grave and significant character, is curiously illustrative of the influence mind is capable of exercising over matter, or moral upon physical as well as psychical organisms, through the successive stages of undue vascular action, capillary congestion, excess in the evolution of nerve force, and appreciable *structural* alterations. These latter having thus acquired a material existence, perpetuate the mental condition from which they had originated,—organic lesions, complicated and obscure, result.

Passing many deeply interesting and instructive cases, showing the peculiarity which is characteristic of a class of obscure brain diseases, we are brought to the consideration of the morbid phenomena of memory.

"What is memory? How are we enabled, by an effort of volition, to reproduce previous mental conceptions, and recall to the mind a long and complex train of apparently obliterated and forgotten thought? Are the ideas carefully housed, registered, and classified in hidden and mysterious cells, vesicles, or chambers of the brain? If so, what is, to adopt the language of Cicero, the nature of this '*thesaurus omnium rerum*,' where the situation of the vesicular mental repository and cerebral treasure-house, destined to garner, preserve, and protect from injury, the myriads of ideas that obtain an entrance with the mind through the media of the senses? Is memory a distinct sovereign power, exercising independent autocratic authority, or, is it one of the results of a *combined* or *complex* operation of several of the mental faculties?"

These abstruse questions Dr. Winslow proposes to discuss in relation to the metaphysics or psychology of memory by the examination of principles, together with facts, which reason and experience suggest. It is desirable for this purpose to pre-

viously consider the natural order in which various classes of ideas stand in relation to each other, not only as to the *priority* of their admission into the mind, but the *durability* of their impression on the sensorium. The fact on which metaphysicians agree, that *qualities* of objects and events are more easily retained in the mind than dates or names, receives confirmation from a study of mental operations pending the inception or cure of cerebral disease. Gratiolet's view, that the ideas of things being more or less allied to the notions we have of ourselves, are effaced the more easily, the less they are thus associated and identified, may be adopted for the purposes of logical truth in psycho-physical investigation. We are far, however, from coinciding in the metaphysical accuracy of such a proposition, and with difficulty refrain from entering on its more extended discussion. The established fact to which he refers, that general ideas disappear from the mind only after those that are particular and contingent, seems to be at once explicable on the ground that, the greater the comprehension or aggregation of ideas, the more extensive are the sources to which memory can recur. Dr. Itard has observed that the loss of memory that generally accompanies attacks of apoplexy occurring in advanced life is first manifested by a forgetfulness of names, then of substances, then of verbs, and next of adjectives. These phenomena receive some explanation from the arguments of Locke, as well as views of Vives, who, as translated by Sir William Hamilton, writes: "The order of learning is from the senses to the imagination, and from this to the intellect. Such is the order of life and nature. We thus proceed from the *simple* to the *complex*, from the *singular* to the *universal*." Gratiolet, in thus asserting the influence of individuality in giving a special direction to mental phenomena, affirms no more in psychology than is conceded in pathology: that the general laws of life are capable of modification in their particular expression. Be this as it may, we escape the difficulty its examination presents by assuming, for the purposes of our investigation, that the accurate exercise of memory is in the ratio of the facility of reviving or recalling ideas, which, in their turn, are the least apt to be forgotten according to the repetition their complicity involves, or the special force with which they have been originally impressed. This general proposition, which we believe offers no violence to metaphysical truth, receives confirmation from the observation of cerebral disease, and will be reverted to when considering those pathological views which Dr. Winslow advocates. For the present we deal with results, not

causes; facts, not explanations, and therefore proceed to notice what experience has observed in reference to disordered memory.

In estimating the condition of the memory in relation to suspected cerebral or mental disease, it is important to remember, that as age advances, the power of recalling to the mind, by an effort of the will, recent events, becomes much impaired, and is sometimes altogether destroyed; while, in a few instances, the faculty of memory exhibits an extraordinary degree of elasticity, and a surprising amount of vigour. This difference appears equally manifest in the ability of the aged to revivify recent mental impressions, and seems so far confirmatory of Locke's view, that memory is a faculty which, in a degree at least, is dependent on physical constitution. Various explanations have been offered of this difference of memory, observable between age and youth, as well as in age. A weakened power of will as part of general systemic debility, if received as the sole reason, would argue a necessary connexion between physical strength and mental vigour, which experience opposes. To attribute it to the relative impressibility of separate brains would be to fall into a similar error in an opposite direction, and call pathology to judgment. We are thus driven to observe events, and from them to arrive at practical deductions, through which, for *practical purposes*, we may be enabled to form an approximate if not a wholly accurate opinion. This, we contend, is the object with which the physician enters on such subtle inquiries.

"The memory is often the power of the mind that first exhibits in the acute and chronic affections of the brain and intellect, as well as disturbances of the cerebral circulation, symptoms of disorder, impairment, and decay. In many of the organic diseases of the encephalon, some modification or weakness of the memory is usually observed; and in cases of red and white softening, cerebral tumours, as well as in those morbid changes in the nerve matter, its membranes or vessels, associated with general paralysis, this mental power shows frequently marked symptoms of early senescence."

Were this uniformly the case, comparatively little difficulty would be experienced to that now felt in determining the association of psychical manifestations and physical conditions. It is not so. Instances of extensive organic disease of the brain occur, without, in a marked degree, deranging this faculty. In some cases of tumour, abscess, and even extensive pulpy softening of the brain, Dr. Winslow writes: "I have known the memory to continue intact up to the moment of

death." The only explanation a phenomenon of this kind admits of, we have premised in our early observations respecting cerebral physiology and pathology. The humiliating admission must be made, that, should such explanation fail, we have no other to offer. Humiliating—let us rather write, reverential, in thus confessing an inability to solve the great mystery of our being.

"Previously to attacks of apoplexy and paralysis, patients are heard to complain of a stunned, inactive, confused, and sluggish state of the faculty, indicated by a difficulty in recalling with facility ideas to the recollection. The attempt to revivify former states of consciousness is accompanied by a severe effort and sensations of physical distress referable to the head. This impairment of the memory is often connected with a condition of hyperemia of the brain, and is occasionally premonitory of apoplexy, congestion, inflammation, softening, delirium, and other forms of acute cerebral disease."

This symptom is also often associated with headache, vertigo, slight loss of sensation, and unrecognised *epileptiform* or even *epileptic* seizures. In the incipient stages of cerebral softening, as well as in those organic disintegrations of the delicate nerve vesicles observed in what is termed progressive general and cerebral paralysis, the patient (writes Dr. Winslow) "often exhibits a debility of memory, long before disease of the brain is suspected, in regard to the most ordinary and trifling matters connected with the every-day occurrences of life." This condition, unless manifest by the conduct of the patient, may exist for a long period as the only recognised and appreciable psychical sign indicative to himself of impaired mental power. To the physician, not only will this progressive, *persistent* impairment be significant of latent mischief, but sudden, *transient*, and paroxysmal attacks of loss of memory will indicate the necessity for most important consideration in relation to the cerebral state. The many cases recorded as illustrative of these pathological relations abound with curious experience. On the one hand, intemperance; on the other, abstinence, eventuate from different causes in similar results. In all cases the general principles receive confirmation, that health is the reflex of that constitutional harmony by which nature proclaims integrity of organism: that fidelity of function demands for its preservation a co-operation of moral and physical agencies, the interruption of either of which seldom fails to find proclamation. In many cases it is observable, in the incipient stage of brain disease, that the memory is not so much impaired as it is confused

and erratic in its manifestations. In inflammatory, as well as in white softening of the brain, this confused condition is a prominent and common symptom.

These more general symptoms, marking the operations of memory in brain disease, sometimes assume a modified form, such as "recollecting only the Christian name of relations and intimate friends; confounding one name with another; being able only to pronounce words of a certain sound, with an inability to remember or articulate particular letters of the alphabet." Illustrations are afforded of this form of the affection. Dr. Osborne has directed attention to two kinds of loss of memory of language: the first he believes to be usually connected with softening of some portion of the brain, and is most frequently witnessed in advanced age. This is characterized by an imperfect recollection of dates, names of places as well as of persons; but, as far as the muscular powers of articulation have not been impeded by paralysis, the faculty of language remains unimpaired, and the individual speaks with his usual facility, until all the faculties become involved in the disease, and total fatuity results. The other imperfection, he believes, involves language in all its parts nearly in an equal degree, except in the slighter forms, when proper names, or other words of less frequent occurrence, are alone affected. It does not consist in want of memory of the word to be pronounced, but in a loss of recollection of the mode of using the vocal apparatus so as to pronounce it. This peculiar affection comes on during all ages. Although appearing to arise from disease of the brain, it is not necessarily the precursor of any serious cerebral affection. Dr. Winslow, while reserving his complete adoption of these propositions, affords many examples indicative of the peculiarity either presents. We are, in studying the number and variety of the instances he sets forth, forcibly impressed with the vast erudition, as well as large and matured experience, they display. To attempt anything like a résumé of the psychological incidents with which the cases detailed abound would, we feel, be to deprive them of that material value which rests in the nature of the accompanying symptoms, and the character of their previous history. The reader will readily perceive the force of these observations is to impress the necessity for their study. The perversion and exaltation of memory, which Andral, Leuret, Hunter, and Combe, afford examples of, are confirmatory of the view that an analogous, if not identical, physical condition of the brain, is requisite for identical or analogous expression, and is to a certain extent an argument that the physical media exercise considerable influ-

ence in the expression of psychical operations. The instance related by Combe is a remarkable one. "An Irish porter forgot, when sober, what he had done when drunk, but, being drunk again, distinctly recollected the transactions which had occurred during his former state of intoxication. On one occasion he had mislaid a parcel of some value, and in his sober moments could give no account of its *locus in quo*. He again became intoxicated, and then clearly recollected that he had left the parcel at a certain house, and, having no address on it, it had remained there safely, and was immediately given to the party who claimed it." Analogous capability has been observed in cases of somnambulism, as also in certain neuro-hysterical conditions, in which memory, for specific direction, demanded specific conditions, and was otherwise incapable of recalling or being recalled to certain events, however recent. In some cases, during the early period of brain disease, the memory is in a state of morbid exaltation, the patient having a vivid recollection of occurrences that happened many years previously, and which had, apparently, been forgotten. In the cerebral diseases of early life this symptom is frequently observed, and should never pass unnoticed. In some cases of insanity we also observe an acute condition of this faculty. Romberg, Portal, and Haslam, have each perceived the importance of recognising this latter symptom. "I have witnessed," writes Dr. Winslow, "some singular instances among the insane of extraordinary retentiveness of memory relating to recent transactions; but I am bound to admit, as a general *postulate*, that this faculty is found, in the majority of cases, in an impaired and muddled state."

The considerations which our previous observations present, are, in a measure, preparatory to the investigation of the psychology and pathology of memory. It is difficult, Dr. Winslow observes, "to suggest a physiological or metaphysical hypothesis, which satisfactorily explains those remarkable conditions of mental paralysis, singular manifestations and alternations of memory, as preceding, accompanying, and following acute and chronic affection of the brain, unless we espouse the doctrine of the indestructibility of ideas, and subscribe to the notion that no impression made upon the mind is ever destroyed." Admit this doctrine to be pathologically true. However it may be taken as a reason for contemplation, or that act or power of the mind whereby it holds its ideas continually in view—is it competent to explain the principle by which the mind possesses a power of reproducing any idea which it has formerly had from sensation or reflection, merely

by an act of the will, and without the presence of the object, or existence of the operation from which such idea was originally derived? Granting Locke's postulate that ideas exist, repudiating the antagonism of Reid, without adopting the views of Berkeley or Hume the question of the indestructibility of ideas in their relation to memory invites to a wide field for discussion. Memory supposes ideas to exist in succession, and must be thus regarded as a quality given to supply the want of perfect contemplation; invest ideas with elementary materiality, which is involved in the hypothesis of indestructibility, and curious problems present themselves as the consequences of disease and accident in their operation on the material cerebral structure.

"If we accept this as an established philosophical theory," writes Dr. Winslow, "we can easily understand how subtle microscopic changes in the delicate nerve vesicles (gray matter of the brain), may cause great eccentricity and singular irregularity in the exercise of the memory, and occasionally in certain morbid, as well as healthy conditions of cerebral exaltation, awaken into active consciousness ideas imagined either to have no existence, or long since supposed to be buried in oblivion—assuming that what is true with regard to material, holds good, *a fortiori*, respecting psychical phenomena." "Hence the tonic, permanent, and indestructible character of the impressions made upon the *cerebrum*, and *received* and *registered* in the mind during infancy and childhood, as well as in adult age, as established by their resuscitation in advanced and at other periods of life, during certain normal and abnormal conditions of the vesicular brain structure and cerebral circulation."

It is right that we here endeavour to avoid the Platonic error of adopting propositions, whose truth, it may be asserted, is a conformity, not to the nature of things, but to our own hypothesis.

Dr. Winslow, having propounded the theory, does not shrink from its vindication—

"How, it may be asked," he writes, "can the physiologist and pathologist reconcile with this latency and indestructibility of psychical conceptions, the fact of the constant wear and tear, destruction and construction, waste and reparation, absorption and deposition of nerve-brain matter? Can the doctrine of the individuality and indivisibility of mind, and the metaphysical theory of the purity of the consciousness, be established on a philosophical basis, if these physical laws are acknowledged thus materially to alter the structural organization of the brain, and to produce modifications in its recognised intellectual and emotional manifestations?"

The answer to this exhaustive objection rests in the analogy observable in other physical operations, which, though inexplicable to reason, afford for the practical purposes of life an adequate basis for beneficial action. The laws regulating the action of nerve matter as yet are inexplicable; the laws which determine the interchange and relation of ideas in their isolation and complicity, are equally profound. Studying the book of nature by the light of experiment, which she for our instruction in disease institutes, we find that physical facts, though practically true, are irreconcilable with our knowledge of organic revolutions occurring in the economy Are we, therefore, to reject the advantage their adoption offers, or, acknowledging the benefit, repudiate the principle? But it is asked, how can the brain be the organ of memory when its substance is admitted to be ever changing? The answer is supplied by Mr. Paget, who, in unison with Dr. Winslow's views, observes: "Because of the exactness of assimilation accomplished in the formative process; the effect once produced by an impression upon the brain, whether in perception or in intellectual art, is fixed, and there retained; because the part, be it what it may, which has been thereby changed, is exactly represented in the part which, in the course of nutrition, succeeds to it."

Before proceeding to a consideration of the interesting cases advanced in illustration, if not demonstration, of the truth of the theory proposed, let us recall to recollection that considerable portions of cerebral matter have been removed, and extensive disorganization of structure has progressed to fatal termination, and yet in neither instances has the memory been perceptibly impaired. Here our inability to estimate the vital correlation of simple ideas, or the subsidiary processes which nerve particles are capable of assuming for the discharge of collateral or sympathetic duties, precludes us from adopting such facts in repudiation of the theory suggested. The illustrative cases are examples in which, under peculiar conditions of the cerebral system induced by hanging, drowning, asphyxiating, or other causes, striking tableaux of the minute and remarkable occurrences of the past life have been presented. Experiment and pathology unmistakably affirm that ideas are recalled, reproduced without as well as by the act of volition. Whence they were derived, and how they were removed, Dr. Winslow attempts to explain by the theory discussed,—a theory which, in the present state of our knowledge, we venture to affirm is, for the practical purposes of life, adequately sustained. Reverting more particularly to the phenomena of memory, the question arises, how are we to explain physiologically the *mo-*

dus operandi of attention in fixing certain impressions on the mind? Is the fact referable to a mechanical or physical law? We have already supplied a partial response. The will, as a power whose existence we acknowledge through its operations, in its cerebral relation to the material impression assumed to exist, has, as we have already asserted, the faculty by memory to reproduce impressions *fixed*. How is their fixity attained?

"Are," asks Dr. Winslow, in furtherance of the theory he suggests, "the ideas conveyed to the mind productive, at the time of their conception, of a molecular change in the *physical* structure of the brain, and are the impressions so made on the *material* instrument of thought, subsequently, by an effort of the will, revived, and only made objects of consciousness, by the application of a *specific* kind and degree of stimuli, physical, mental, objective, or subjective, applied to the special cerebral registering of ganglia, upon which the mental pictures are supposed to be traced?"

Adopting, in deference to this theory, an affirmative reply to this question, we are led to the investigation of how far such a proposition is in accordance with, if not explicable by phenomena observable in disease.

"In many cases of want of sequence in the ideas, or defective continuity of thought, the cerebral nerve channels, considered to be the media for the transmission of impressions to and from the brain, are either impervious to their free passage, or there exists a loss of *efferent* conducting power in the central nerve fibres, arising (most probably) from some subtle, and, as yet, unexplained *mal-nutrition*, morbid change in the molecular portion of their tissue, abnormal condition of what is termed the *polarity* of the nerve force, or change in the *chemical* constitution of brain matter not yet discovered in the laboratory, *and at present inexplicable to the physiologist and pathologist.*"

This latter sentence, which we have italicised, contains the germ of all questions in natural science. Does it affect practical, however it may logical truth? We apprehend not. Who, with experience of life, expects in medicine mathematical precision? In the former we are driven to first adopt or establish that which we conceive to be a correct ascertainment of the data from which we are to reason, and then to preserve correctness in the process of deducing conclusions from them, the proof of either data or conclusion resting in the observation of life. In the latter we set out from arbitrary definitions and postulates, readily comprehended, which are the principles from which, by the help of axioms hardly needing even to be stated, our reasonings proceed. No facts whatever re-

quire to be ascertained, no process of induction to be carried on,—the reasoning process is nearly everything. Scepticism in medicine, like infidelity in religion, rejects the source from which faith can alone spring. Life and Deity, though manifest in the world around, find many who repudiate the operations of the one, and deny the presence of the other. Existence still, however, goes on. Men sicken and die; God continues to be gracious; while Philosophy is forced to admit many things are past her finding out. "Comparing," proceeds Dr. Winslow—

"The aggregations of gray matter on the hemispherical surface of the brain to a galvanic battery placed at the extremity of, or in connexion with, a number of electric wires (the white medullary cerebral matter), we can easily understand if any of these should become deranged, and not be in healthy condition, or the battery (the brain) itself be out of order; that the ideas cannot be freely transmitted (in consequence of a breach of continuity in the channels of communication, conducting, or *efferent* nerve tubes) in obedience to the mandates of volition, originating in the primary dynamical centre of the *cineritious* portion of the cerebral mass, or that the impressions made by the feeble (disordered) effects of the mind upon the motor and sensor powers may be faint, confused, or altogether unintelligible. Can we explain by any other hypothesis the singular anomalies in the operations of the mind to which I am about to refer?"

Some pseudo-practical reasoner may in this challenge Dr. Winslow to the proof, not, however, in the same reflective spirit as Locke did Des Cartes, for his assumption that the quality of thinking was the essence of the soul—and affirm that the suggested theory is a sophistry begging the question it is presumed or intended to explain. Be it so. Those who thus differ must study the illustrations, which countenance, if they do not establish, this theory. Having done this, let them say what other hypothesis is capable of so largely embracing, or is so completely reconcilable with, those vital truths which the operations of disease exhibit: What other hypothesis presents so many arguments derivable from analogy and sustainable by fact? What other hypothesis assumes so little and explains so much in the investigation of a subject intricate and profound, which from the beginning has baffled the ingenuity of man, and to the end will defy the efforts of philosophy.

Here, for the present, our analysis and criticism must rest. We have accompanied Dr. Winslow through one section of his volume, and endeavoured, with him, to investigate the phenomena of *thought*, as indicative of cerebral disease. The physical evidences of the same, which *motion* and *sensation* afford,

we purpose, in connexion with nervous pathology, to review in a future Number. Then also shall we enter on the chapters devoted to a consideration of the general principles of pathology, treatment, and prophylaxis, replete as they are with the most valuable suggestions which a close study of disease affords. Meanwhile, this work will be carefully studied and received by the profession as the master effort of a great medical philosopher, whose wisdom, experience, vast research, large observation, and close reasoning, each directed to diagnostic and practical curative purposes, are, for the benefit of mankind, and to the glory of medicine, inscribed in faithful characters upon every page.

Tents and Tent Life from the earliest Age to the present Time. By GODFREY RHODES, late Captain of Her Majesty's 94th Regiment, now Major Unattached. Second edition. London: Smith, Elder, and Co. 1859. 8vo, pp. 267.

IT has ever been admitted that exposure to the atmospheric influence during a campaign is certain to induce disease amongst the soldiery, and to effect more disastrous results upon an army than the most deadly assaults from the opposing enemy. Facts are not wanting to prove, were such necessary, that tents are an essential appendage to every army that takes the field; whilst history, also, demonstrates the utter insufficiency, under special circumstances, of the appliances hitherto in use for their intended purpose.

The author, as he informs us in his preface, having been one of the sufferers by the sad disaster which befell our troops in the Crimea on November 14th, 1854, when a fearful hurricane swept away almost the whole encampment, turned his attention to the construction of a tent devoid of the defects which had previously existed, while it afforded dry, secure, and well-ventilated shelter. This led him to a consideration of the mode of constructing tents throughout all ages; and to these circumstances are we indebted for the very able and interesting work now before us.

It would be altogether beside our duty to do more than glance at the historic sketch before us of the progress made in tent-architecture during the earliest ages, inasmuch as our attention ought to be more properly fixed on the hygienic condition of their structure. Suffice it, therefore, to state that this portion of the work,—commencing with the first mention of tents in Scripture (Genesis, iv.), tracing out those of Grecian,

Roman, and Scythian antiquity, and embracing those peculiar to every country and tribe in each of the four continents of the world through every age down to the present time,—indicates deep historic research, and that its perusal will afford abundant gratification to the general reader.

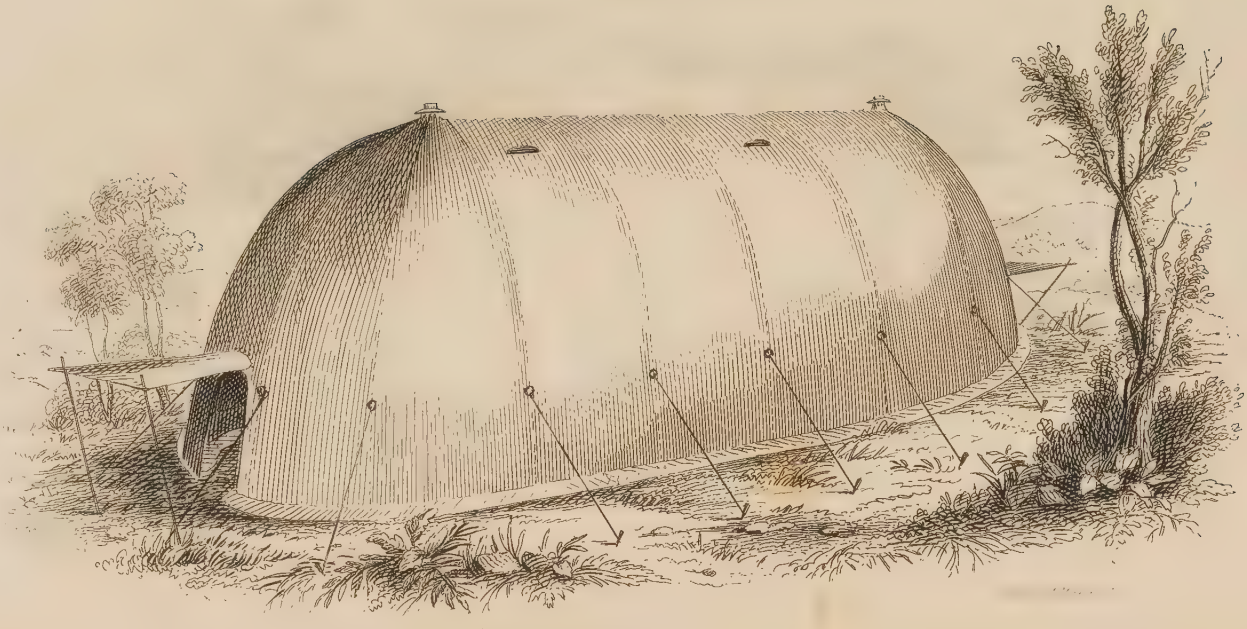
It is not necessary here to describe the tent in ordinary use in the British army. We must not, however, omit to mention that at the Great Exhibition of 1851, a prize medal was awarded to "Edgington's Improved Military Tent," which the author,—who occupied one of them during his campaign on the Danube, as well as during that in the Crimea,—describes as waterproof, and very comfortable, yet still wanting the important element of stability, having been blown down during the gale of the 14th of November.

The objections that have been urged against the existing form of tent appear to be, excessive weight, and consequent difficulty of carriage, prolonged time required for erection, inability to resist severe storms, diminution of interior space by tent pole, no protection from damp earth to the men when reclining, under-current draughts of air, and very imperfect ventilation.

To obviate these inconveniences, Major Rhodes has invented the tents which now bear his name, and which have been designated "The Guard Tent," "The Field Tent," and "The Hospital Tent," according to the purpose to which each is to be applied; and the advantages which he claims for his tents are "their great portability, and strength to resist storms, as well as the ease and rapidity with which they can be pitched and struck," together with "effectual protection for their occupants from the weather."

"To this end," to use the author's own words, "instead of using as it is now customary, the objectionable contrivance of a central pole or poles to take the strain off the tension ropes over which the canvas is stretched, I construct a framework of pliable ribs or laths, composed of wood, iron, or other suitable flexible material, the upper ends of which are inserted into sockets made in a circular or other shaped head-piece of wood or metal, and are capable of being removed therefrom, while the other or ground ends of the ribs or laths are passed through loops made in an endless band or strap, composed by preference of a double-twisted rope. A parabolic or other curvilinear-formed frame is thus made, capable of receiving and supporting a suitably shaped canvas covering, which, when placed over the frame, is secured thereto, and, the ground-band being pinned to the ground, the tent is held securely in place."

From the foregoing description it would appear that the



My own Hospital Tent.

arched shape considerably increases the interior dimensions of the tent, whereby the men can stand upright, while its mid-area is undiminished by the presence of the pole.

"Additional security or firmness," moreover, "is given by outside storm ropes, radiating from the cover at the back of each rib," and these, we have been informed, have proved most effectual in some severe gales, which have fully tested their capabilities.

With a view to prevent the ground current from blowing direct on the men when lying down, "the strong canvas covering, in which the whole tent is rolled, can be divided into two parts, and buttoned to the inside of the tent, the button being provided for the purpose; thereby affording a material ground support to the whole of the canvas around the bottom of the tent." "The canvas covering is," in addition, "provided with an outside and inside skirting, and which when spread out upon the ground, will prevent the wind getting under the covering of the tent." In this way, likewise, the men are to some extent protected from ground damp.

"The entrance to the tent is through a semicircular parabolic or other shaped opening made in the canvas covering; and for this opening I provide a curtain or curtains, which may be rolled up when not in use; or the curtain may be held extended by pegs, and thus afford protection from the sun or rain, without interfering with the free ventilation of the tent. For the ventilation of the tent when the curtain is let down, an opening is made through the head-piece, which may be covered with a ventilator cap to prevent a down draught, or the admission of rain." And again:—"Fires can be lighted within the tents, the smoke escaping through the ventilation holes at the top, which are easily covered or uncovered, as needed."

In this way it is evident that perfect ventilation altogether at the command of the occupants, is secured, while strict attention is likewise paid to the exclusion of sun or rain, and ample provision made against the occurrence of cold.

We have thus far directed attention to particulars which apply alike to all the tents of Major Rhodes, wherein the comfort and consequent health of the soldiers have been materially considered; we must now, however, turn our attention more immediately to his "Hospital Tent," and ascertain how far it meets the requirements of such a structure.

"Rhodes' Hospital Tent" appears to be a prolongation of the two halves of his "Field Tent," which are united by a ridge pole, in which are fitted iron ridge sockets for the reception of the heads of an extra number of ribs. The length of

this tent is 30 feet, breadth, 15 feet, height, 10 feet. In addaddition to the exterior storm ropes used to insure greater stability to the "Field Tent," there are six inside storm ropes for the Hospital Tent; and, with the view to insure efficient ventilation in the latter, openings are left in the canvas coverings, exclusive of those in the head pieces already described.

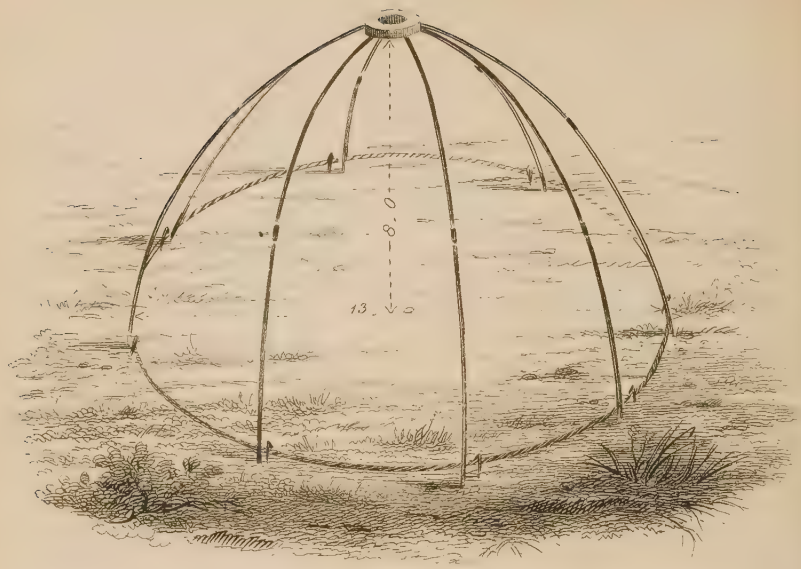
"The author's tents occupy remarkably less space than those of the Government tents. The present hospital-tent is 29 feet long, 14½ feet wide, and 15 feet high, inside measurement; when pitched, it covers a space of ground 20 paces by 17, or about 340 square yards. The author's hospital-tent, when pitched, covers a space of ground 7 paces by 9, equal to about 63 square yards, the difference in favour of the latter being about 277 square yards. Thus, on the author's principle, five of his patent hospital-tents occupy the same superficial quantity of ground as is required for only one of the Government hospital-tents. The latter give accommodation to either twenty sick, or thirty soldiers fit for duty; whereas the former, with five tents, which occupy no more space, gives accommodation to one hundred sick, or one hundred and fifty soldiers in health.

"The patent hospital tent, when packed up, weighs 95 lbs., whereas the Government hospital tent of the same dimensions weighs 507 lbs."

We have now set forth the most important features of Major Rhodes suggested alterations, as described by himself in the work before us, and to the correctness of which we can bear our unqualified testimony, having had the opportunity of minutely examining the several varieties submitted, some time since, on Leinster Lawn, in Dublin, to the inspection of the authorities appointed for the purpose by His Royal Highness the Commander in Chief, and of witnessing the facility with which each can be pitched or struck by a very small number of soldiers, previously almost entirely inexperienced in the process. We feel no hesitation, therefore, in expressing our conviction that he has clearly demonstrated his tents to be far superior to those now in use, in many important respects; and specially that he has proved his Hospital Tent to far surpass any other in the great essentials: ample accommodation, combined with comfort to the men; abundant space for the unrestricted movements of the surgeon and attendants; and perfect ventilation, united to the most complete protection from changes of temperature and weather.

The energy manifested by Major Rhodes in his earlier inquiries on this interesting subject does not appear to have abated, nor does he seem satisfied to rest with the laurels he has already obtained, but he has continued indefatigable in his

My own Field Tent.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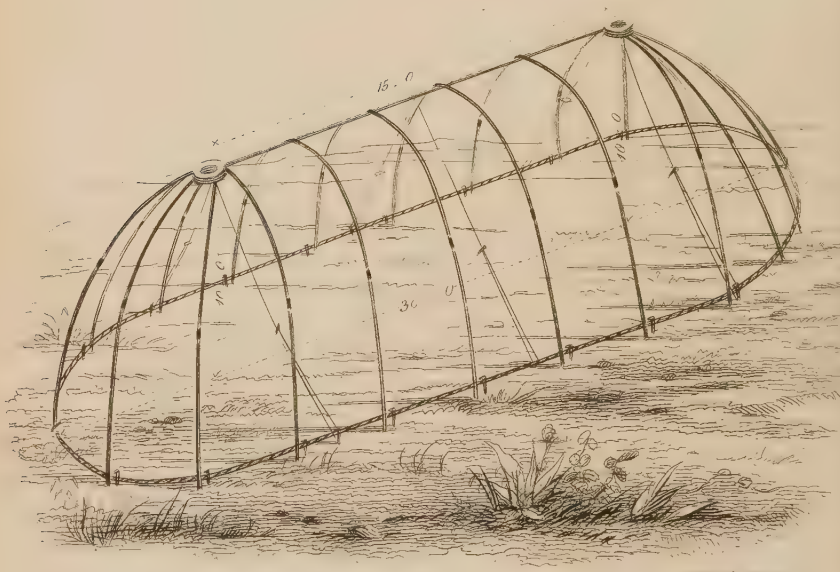
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efforts to improve his tents so as to render them, as far as possible, in every way effective in maintaining the health and comfort of their occupants, and in husbanding their physical energies.

In the model which he has constructed to demonstrate the recent improvements he has made in his "Field Tent," under the designation of "Rhodes' Patent Field Tent," each rib is jointed at the middle, the lower portion of which slides up the *under* side of the upper half, whereby its length, when packed up for carriage, is reduced to one half, while the tops of all the ribs are permanently secured by joints to the centre head, round which the canvas covering is likewise fastened; the lower portion, which descends to the ground, being left free, but capable of being attached to the ground rope when the tent is pitched. When about to be packed for transport, the ribs are turned up on the head, having the canvas on the inside, the whole being thus inverted, and resembling an umbrella, divested of its handle, turned outside in.

With the view to remove the strain or outward pressure, each rib is trussed or strung up with thin but very strong galvanized wire rope, curving the entire rib like a strung bow; the top end of the wire being secured to the head piece, its bottom end being attached by a ring or other permanent secure fastening to the ground line.

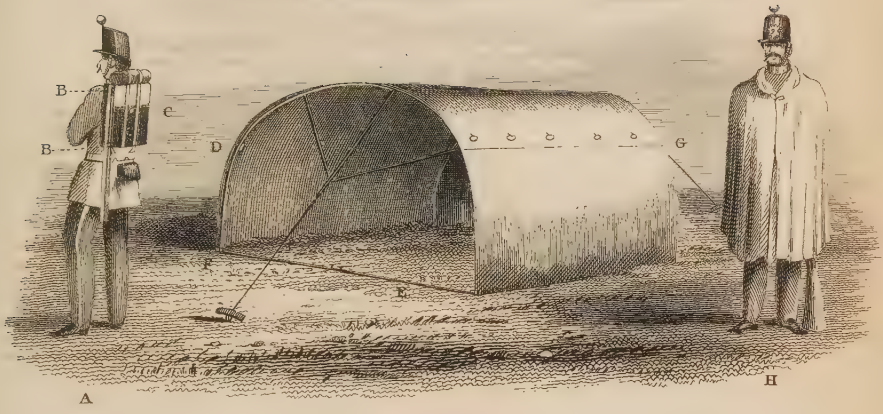
This tent, framed with eight ribs, each trussed by a galvanized wire rope, will, consequently, form internally a series of eight straight lines, arranged in the shape of a cone, like the existing "Government Bell Tents," but externally will present the parabolic curve. By this arrangement the cubic content of atmospheric air is much greater than in the government tent, while the space within for the movements of the men is nothing less, and increased stability is secured, the tent being able to stand without having any hold on the ground, and capable of being removed bodily to a fresh position without being struck, it being only necessary to remove the short storm lines.

The canvas coverings, too, which are of double sheeting, and waterproof,—a great desideratum,—can be readily loosed from the ground rope, and hoisted, during the heat of the day, up to the top, outside the head piece, with a view to the ground included within the limits of the framework being dried by the hot sun: and thus the tent may remain permanently pitched while the most perfect sanitary arrangements are secured; and at the same time it is necessary to bear in mind that ventila-

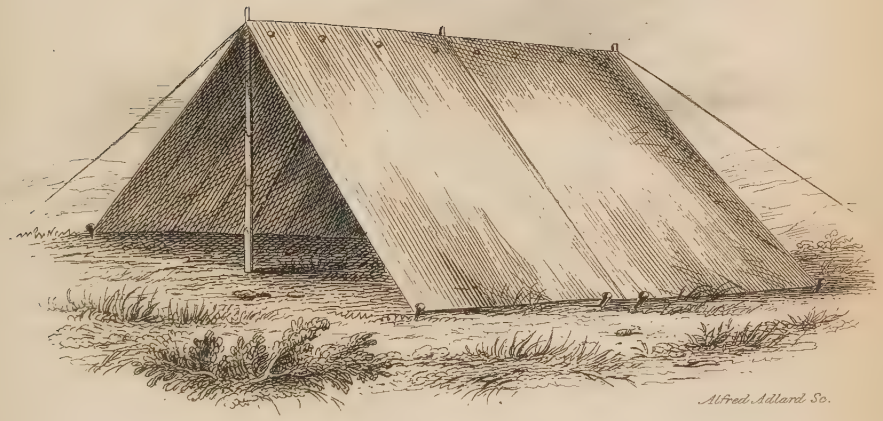
tion is fully provided for through the head, even when the tent is completely closed.

With the view to facilitate packing, one entire end rope is permanently fixed on each sheet, with which the whole package is tied round when being made ready for transport.

Major Rhodes has likewise introduced another tent, a model of which has been exhibited at the present Annual Exhibition of the Society of Arts in London, which opened on the 9th of April. This tent is intended to supply the place of the "*Tente d'Abri*" of the French, and to it has been given the name of "Rhodes' Patent Bivouac Tent." It is of a curvilinear or tunnel shape, formed by ribs much more considerably curved and trussed than in the former. The ground ends of each bowed rib are inserted a few inches into the ground, at the distance of six feet asunder, a square of six feet having been thus obtained. The height of the tent is three feet six inches. Two double cotton and waterproof sheets of equal dimensions are then doubly buttoned together. The entire sheet, capable of covering the whole frame work, is then tied or secured to the bowed ribs by means of leather thongs, or strings permanently fastened to the coverings; a wire or suitable line is also permanently secured to each sheet, at or near the apex or crown of the arch; to this are attached two short side lines hooked on to the tent-covering at about one-fourth of the periphery or radius of the existing bowed rib. The other ends of these lines are secured by two tent-pegs, invented by Major Rhodes, who calls them "ground-screws." These screws essentially differ from any hitherto introduced for securing the lines of tents to the ground, the old screw having a hole in the top, into which a large nail or piece of stick—seldom at hand when required—must be inserted as a lever to turn it, while that now introduced has a cross handle, like a corkscrew, and can be screwed into or out of the ground by the aid of the hands alone. Attached to one end of each sheet is a drop-curtain, and, by the means of buttons thereunto attached, one end of the "Bivouac Tent" can be closed or opened at pleasure. The total weight of the entire tent, &c., is about eight pounds, and as one-half is intended to be carried (if necessary) by one soldier, four pounds will be his portion. The rib, when packed up and bound round with the wire or other ground-line, has been purposely contrived so as to serve as a walking-stick for the soldier on the line of march, should he require it, while the waterproof sheet can be used by him as a cloak or cape, if the weather demand such protection.



Rhodes' Bivouac Tent.



French Tente d'Abri.

The " *Tente d'Abri,*" which this is designed to substitute, is open at both ends, and is pervious to rain, its covering not being waterproofed. It is of an angular shape, five feet eight inches long by seven feet six inches wide, and four feet in height, supported by two central rods or sticks, four feet four inches in length, of which four inches are intended to be inserted into the ground. The weight of the entire, consisting of two sheets, two poles, and six wooden pegs, with two short end storm lines, is, when dry, from seven to eight pounds.

A comparison of these two forms of tent appears to us to demonstrate the superiority of " Rhodes' Patent Bivouac Tent" over the " *Tente d'Abri,*" for while they each are nearly of the same weight, the former is not incumbered with poles or pegs; it possesses great strength, combined with extreme simplicity of construction, elegance of form with lightness of structure, considerable interior space with little superficial area, and complete imperviousness to the most severe rains. Moreover, should it be desired, a number of these tents tied together for additional security, can be so arranged,—the open of one corresponding with that of the next,—as to form a continuous tunnel of any length.

The chief advantages claimed by Major Rhodes for his Patent Bivouac Tents are:—1st. The great facility with which they can be pitched—any two soldiers, at a push, being able to effect it; 2nd. The capability of each tent to accommodate three soldiers; 3rd. Their extreme lightness, not weighing more than eight pounds each; 4th. The ease with which they can be transported, on a forced march, over the worst mountain road or bye-path, on mules, one of which can, without inconvenience, carry thirty of these tents, which weigh in all but 240 pounds,—ample accommodation for ninety men, or, in other words, for one company; and 5th. The convenience resulting from the ability of the occupants themselves to carry their tents when out in small parties, or in the event of emergency, two of them having each one-half thereof fitted to his knapsack, while the third carries the waterproof sheet, which serves him as a cloak, should he desire it, and which he places on the ground when the tent is pitched, to protect his comrades and himself from the damp.

We have now endeavoured to point out the essential points of difference between the plans laid down by Major Rhodes, in the work under review, and those comprising his more recent alterations, and to describe the models now in the exhibition of the Society of Arts; and, while we agree with him that many of these are undoubted improvements, and well suited for

a field or bivouac tent, we cannot withhold the expression of our conviction that they are unsuitable for an hospital tent, wherein loftiness, combined with abundant space for the surgeon to move freely between the beds, and ample head-room, without the fear of coming in collision with the wire-rope trusses, are absolutely essential; we therefore trust he does not contemplate the substitution of these for the admirable Hospital Tent described in his book.

We cannot, however, rise from our task without expressing our opinion that, whether the subject is viewed in a military, philanthropic, or hygienic aspect, Major Rhodes has earned for himself a highly practical and scientific reputation for his invention; while the work before us, in which he has eliminated his views clearly and concisely, is creditable alike for its matter, arrangement, and composition.

Cancer Cures and Cancer Curers. By T. Spencer Wells, F. R. C. S., &c. London: Churchill, 1860. Fcap. 8vo, pp. 93.

The perusal of Mr. Spencer Wells' caustic pamphlet is well calculated to make us acquiesce, with a tolerably near approval to equanimity, in that proverbial poverty of our island which has so far guarded us from an inroad of the fraternity of cancer quacks. Drs. Pattison and Fell, the Rev. Hugh Reed, and le Docteur Noir, would scarcely find victims here so rich and so easily humbugged as London and Paris have supplied them with. Fees of £100 in weekly instalments of £25 are not too plenty for the cure of small lupoid ulcers of the face, and the uncommonly fat goose, plucked to the tune of 40,000 f. by Vriès, would be an ornithological phenomenon indeed. At the same time, we know that some, it may be many, sufferers from cancers, have been entrapped from this country into the dens of those quacks, to the serious lightening of their purses, and what is much worse, to the fearful aggravation of their sufferings, and in some instances to the shortening of their lives. For this cause, as well for its own merits, we are glad to have the opportunity of directing attention to Mr. Spencer Wells' brochure, and we entreat all who are brought in contact with cancer patients (whether surgeons or friends) to make themselves masters of its contents. It has the further recommendation of brevity. There are three points connected with it, to which we wish to draw special attention. First, the villany of the cancer quacks. Secondly, the curability of cancer in some

instances. Thirdly, the shortcomings of ourselves in the matter of relieving cases unfit for the knife. First, then, it does not surprise us to find that the cancer quacks have added nothing to our means of combating this formidable disease. As Hume says: "In spite of all warning, we see one generation after another, with their eyes wide open, walk into the same gulf of fraud, quackery, and imposture." Nor will the failure of one race of quacks after another suffice to cure the public of their proneness to believe them. Contrary to their better judgment, people have been lured to their destruction by one lying prophet after another, "from the days of Jeroboam, the son of Nebat, who made Israel to sin," to the present hour. The strangeness of the thing in the case of cancer is that the lie is ever unvaried and the same,—"a certain, painless, permanent cure." Such is their invariable promise, followed by a prolonged agony of cauterization, and speedy relapse in almost, if not every instance of genuine cancer. Nor is there any variety even in the caustics employed: arsenic and chloride of zinc, with one or another innocent or irritating vegetable menstruum suffice for their armamentarium, varied occasionally with mercury to the extent of profuse salivation. The Plunketts and Fellows but revived the escharotic which had obtained favour in cancerous ulcers from the days of Hippocrates; while Canquoin, Ure, and other medical men, had tested the value of the chloride of zinc before Pattison and Fell added to it the harmless sanguinaria and vaunted it as a specific. Those who read the detailed results of many of their so-called cures, as traced out by Mr. Spencer Wells, will have but one feeling of concentrated disgust excited in their minds. We shall not occupy our space with extracts from this portion of his pamphlet; suffice it to say, that not only is the cure by caustic tenfold more agonizing than the knife (even without chloroform) could be, but, if we may use an Irishism, it is no cure at all; weeks and months of burning torture, with weary days and restless nights, whence sleep was banished, were the lot of those unfortunates who confided themselves to these men. The terms used by the patients themselves express with harrowing force the tortures they underwent. In one it was "a grinding, wearing agony;" and a relative says: "Suffering never ceased from the beginning of the operation (October 11), till her spirit was freed from the worn-out body (February 7)." In another it is "five weeks in misery, for several hours after the daily dressings the torture had been almost insufferable," and so on to the end of the chapter. And the result of these cases was relapse and death. The last of the race who has appeared is

the Rev. Gentleman who began with curing cholera and small-pox (on paper), and has ended with salivating, and applying chlorine gas for the cure of cancer. As the Lancet sums up respecting him, "modesty does not restrain him, for he pretends to cure cholera, ovarian dropsy, phthisis, and cancer. Humanity does not urge him, for he keeps his remedies secret. Christian benevolence does not move him, for he cures for money." In the latter particular he is accommodating, as his fee varies from one hundred guineas to less than one. With regard to the Black Doctor, they manage these things better in France: he has got fifteen months' imprisonment, and is fined 500 francs, and his goods have been sold for rent.

We have spent so much time on the first point to which Dr. Spencer Wells' pamphlet directs our attention that we can but briefly notice the other two. With regard to the curability of cancer, there is some discrepancy between the earlier portion of the pamphlet and its conclusion. This is accounted for by the fact of its being in part a reprint of a lecture delivered two years ago, and in part a recent production. In the last pages he gives evidence of his conversion to the advantages of early operation, and by the reasons he assigns it is plain he holds, with Virchow, and all the advanced pathologists, "the local origin of morbid growths, and the secondary contamination of neighbouring parts and of the blood by extension and by absorption of the products of local disease." He does not seem to have arrived at a perfectly clear perception of the unity of cancer and the necessary corollary to that proposition in the selection of the acutely developed encephaloid for operation; but his face is set in the right direction, and we hail him as a fellow-labourer in overthrowing the errors of the old theoretical school of pathologists.

Thirdly, Mr. Spencer Wells draws attention to the shortcomings and carelessness of the medical profession in their neglect of palliative, or, perhaps, curative means when the knife is out of the question. An example given by him is most instructive. "One of the first cases Dr. Fell treated was related to me by the husband of the patient, himself a medical man, and it happened to be one in which Dr. Fell did some good, and which led to his introduction to many of his earlier patients. A lady, who suffered from an ulcerated cancer of the breast, had consulted several eminent hospital surgeons, and had been told that her case was not one in which removal of the breast could be recommended. Simple palliative treatment alone was adopted, and she was left in a very hopeless condition. The odour of her room, and indeed of the whole

house, was so overpowering that the comfort of the inmates was destroyed; servants could not be kept, and even nurses could only be induced to stay by high wages, and an almost unlimited allowance of brandy. Under these circumstances Dr. Fell was applied to, and he said, very fairly, that in such a case he could do no more than remove the diseased mass, and thus give temporary relief. This he did most completely: after the very first application of the chloride of zinc, all offensive odour was completely destroyed; and, even if he had done nothing more, this was felt to be a great benefit. When this was explained to the surgeons who had seen the lady previously, they said that everybody knew the deodorizing power of the chlorides, of charcoal, and of other applications. Then said the husband, very justly, 'If so, why not recommend them? It was either great cruelty or great neglect on your part.' And so unquestionably it was, and it was an illustration of the truth of the remarks I have before made in my lecture as to the necessity of medical men attending more than they do to the means of relieving, even if they cannot cure incurable diseases. It is by the carelessness or neglect of the profession, in this respect, that empirics obtain their real advantage. I need say little more of this case than that the morbid growth was removed by caustics, and that the lady lived some months afterwards in comparative comfort; but that she died from extension of cancer over the greater part of her body." Carrying out his principles, Mr. Spencer Wells gives a brief sketch of various local and internal remedies which he or others have found more or less valuable in cancer. We cannot follow him here without transgressing our limits. He speaks highly of bromide of potassium in cod-liver oil as a valuable sedative and absorbent. Also of Dr. Arnott's modes of freezing and compression; but these and other remedial measures are merely pointed out, and not dwelt upon; still, there are many hints for practical men, and the mere enumeration of remedies is suggestive to the thinker. In conclusion, we hope that Mr. Spencer Wells may at some future time be in a position to give the profession the results of an extensive and legitimate experience in the treatment of this truly formidable disease. In the present instance he deserves our thanks for a pamphlet which is something more than a mere handy answer to the patrons of cancer quacks.

An Introduction to Practical Pharmacy; designed as a Text-book for the Student, and as a Guide for the Physician and Pharmaceutist; with many Formulas and Prescriptions. By Edward Parrish. Second Edition; with 246 Illustrations. Philadelphia: Blanchard and Lea. 1859. 8vo, pp. 720.

The work which is at present before us is a satisfactory proof of the growing importance that is justly attached to the study of that without a competent knowledge of which the practising physician is but ill prepared to compete with his better educated professional brethren. Hitherto it has been but too much the fashion to undervalue the information to be derived from a practical acquaintance with what, in their arrogance, some medical men consider to be, after all, but the *trade* of the apothecary. Taking but a very circumscribed view of what should be the true duties and professional qualification of the apothecary, as we understand the term, they look upon his entire business to be but the making of draughts and mixtures, the compounding of pills and such like duties, almost entirely of a purely mechanical nature. Entertaining such views as these, indeed they may justly look down on those who, by their own conduct, favour such sentiments. But if, on the other hand, we entertain a more exalted opinion of the true calling of the apothecary,—if we consider him as one devoted to advancing a portion of science intimately connected with the best welfare of suffering humanity (as the true votaries of this branch of our profession, both in these countries and on the continent, always have been), his calling is elevated into one of the noblest of our professions,—one worthy of our best sympathies, and commanding our highest respect. In the preface to his "Elements of Pharmacy," Sir Robert Kane has, in appropriate terms, described what should be the true aim and object of the apothecary; and as his views are as true now as when they were written (nine-and-twenty years ago), we shall quote them here for the benefit of the class to which they were then specially addressed:—

"It occurred to me that some observations on those subjects, connecting theory with practice, might be of use in showing to the youth of our profession that Pharmacy, although falsely designated a trade, is a branch of knowledge ranking among the first of the medical sciences, and rivalling in utility the noblest investigations that ever employed the talents of a Broussais or a Davy; that a real apothecary (if our profession in this country was so regulated as to allow of the generation

of such a being) ought to be a zealous lover of science, and an original contributor to its improvement; ought to be such as the fostering encouragement of enlightened France has rendered Robiquet, Serullas, Vauquelin, Pelletier, and that host of brilliant names which illuminate the pages of the 'Fastes de la Pharmacie Française,' and diffuse round the projectors and supporters of such liberal institutions a glory never to be obscured."

It would be entirely foreign to these pages to discuss here the question, why it is that our Irish pharmaceutists have ignored their true position in the realms of science, and, with some few bright exceptions, have not exerted themselves to keep pace with their brethren in England, on the Continent, and in America. But little has been done in this country to advance Pharmacy as an object of scientific investigation, and each day there seems to be less inclination on our part to pursue this track. Enough has been said, however, to vindicate its position as a science, and to justify our respect for those who have worthily laboured to add to our general stock of information on these points; but a word yet remains to be said in favour of the absolute necessity that exists for such of our rising generation as intend to adopt medicine or surgery as their profession devoting themselves to the study of practical pharmacy, if their ambition is to hold a respectable status amongst their compeers, and their desire be to escape many mortifications inevitable from the commission of humiliating mistakes in after life. It would almost seem to be a work of supererogation to dwell on the paramount importance of a person being familiar with the appearance of the agents that he employs in the treatment of disease; and yet well do we know that not one or two, but scores of young men, obtain their several licenses to practise, both here and in England, who know not the appearance of even the most commonly employed of our drugs. As we write, the recollection forces itself on our memory of a young gentleman who, at his examination, on being shown a lump of opium, gravely pronounced it to be tobacco—a mistake that clearly proved him to be, at all events, innocent of an indulgence in the pleasures of the "noxious weed;" and many other cases of a similar nature might we record, were they not familiar as household words to our readers. Presuming, however, that an acquaintance more or less general with the physical appearances of the articles of the Materia Medica be not essential, we would imagine that we might fairly expect some familiarity with the appearance that a mixture, or other remedy, should present on the part of him who prescribes it; and yet how la-

mentable is the amount of ignorance displayed by (otherwise) even good practitioners on this point! Many order a mixture, and, on seeing it, are surprised at its colour, and, unless good tacticians enough to conceal their ignorance, expose themselves to the chance of a severe rebuff at the hands of those who compounded it. We remember once a very celebrated practitioner getting himself into a scrape of this kind, in consequence of his ignorance of pharmacy. Having ordered a gargle for one of his patients, of honey of roses, borax, and water, on seeing its colour he declared that there must have been some mistake of the apothecary; an investigation took place, and the compounder, to protect the character of his own establishment, was compelled unmercifully to expose the ignorance of the prescriber.

To dwell on such points is ungrateful to our feelings; but surely the public have a right to expect that the medical man should be at least as familiar with his tools as the artist or mechanic is with his. And what would we think of a carpenter who did not know the appearance of a hammer or a gimlet? For his own interests, as well as those of his patient, we insist upon it that a good general pharmaceutical knowledge is absolutely indispensable to any person who undertakes the cure of disease. It is not enough for him to content himself with becoming master of the therapeutical properties of medicines: he should know their physical and chemical properties, and their pharmaceutical composition. Then we would no longer meet with such prescriptions as sesquicarbonate of ammonia and syrup of squills ordered as a *stimulating* expectorant, or (as we read in the writings of one of the masters of our chirurgical art) a solution of acetate of lead and sulphate of zinc as an injection for gonorrhœa. The authors of such prescriptions defend themselves, when detected and exposed, under the flimsy excuse that they know them to be unchemical and incompatible, but that they also know them, *from experience*, to be useful. If such be the truth, let them, in the first instance, order the result of those reactions, and then they will free themselves from the imputation of gross ignorance of an important portion of their art, and, at the same time, deprive our students of a powerful excuse of the *tu quoque* character for not praying proper attention to pharmacy.

We may date the first real impetus given to Pharmacy as a science, from, comparatively speaking, a modern date. In olden times, the greater number of ingredients that were in a receipt, the more potent was it supposed to be. Witness that farrago, known to us as Mithridate, with its fifty or sixty in-

gredients. Nor can we wonder at this when we reflect on the great darkness in which all chemical science was plunged. Ignorant of the composition of the substance that they employed,—solely trusting to their empirical knowledge,—our ancestors were content to seek for safety in the multiplicity, not of counsellors, but of medicines. This fact sufficiently accounts for, in but too many instances, the disgusting articles enumerated in their Materia Medica. Once, however, that the genius of Chemistry illuminated the field of Pharmacy, and that the attention of competent chemists was directed to the investigation of the active principles of the medicines that were in repute in the treatment of disease, those disagreeable and filthy articles gradually disappeared from our lists, to be replaced with others far more useful as remedial agents, and not so offensive to our sense of what is agreeable or refined. Much do we owe to the labours of such men as Pelletier, Caventou, Robiquet, Sertüerner, Derosne, Vauquelin, Couerbe, and many others, for the great services they have rendered in this department of science; and to them must we attribute much of the importance that is now so justly attached, by those best competent to form an opinion, to the study of Pharmacy. Still, it is not until a much later period that we find anything like a special treatise devoted to its consideration. In many of the older works written on Materia Medica we find observations on the nature of pharmaceutical operations more or less valuable; and, especially, in Duncan's "Edinburgh Dispensatory," 1826, we may read a more than average article devoted to this subject; but in all these works the pharmaceutical portion was but secondary to the other departments of the subject of which they professed to treat; and we believe that we are correct in stating that the pioneer work specially devoted to pharmaceutical operations was that written by Sir Robert Kane, from which we have already quoted. This was shortly afterwards succeeded by a book, which, although it cannot be strictly looked upon as a work devoted to Practical Pharmacy, still contained so much that was of the highest value and importance in relation to the subject, that we would not feel ourselves justified in omitting to mention it. We allude to Professor Faraday's work on Chemical Manipulation,—a work rich in extensive and varied knowledge of the subject of which it treats, and full of most instructive and suggestive information. Then appeared Soubeiran's Treatise on Practical Pharmacy, to this day a standard work on the subject, which was followed by a translation, by Professor Redwood, of Mohr's "Practical Pharmacy,"—a work in which the translator

incorporated much valuable original matter of his own, and which, in justice to its authors, we must state will always hold an important position in the estimation of those who love Pharmacy and its pursuits. And now we have the present work by Dr. Parrish; though last, decidedly not least, either in the care bestowed on it, or the full and accurate accounts given us upon almost every conceivable pharmaceutical operation.

In thus enumerating the principal works specially devoted to Practical Pharmacy, we should much regret were our observations to lead our readers to undervalue the labours of the host of able and willing workers in this department of science whose researches have from time to time appeared either in our standard works on Materia Medica, or in the pages of our scientific journals. No one can be more alive to the obligations our profession is under to these authors than we are. Our object has been to show that Practical Pharmacy has become a recognised institution in our medical world, and that authors of acknowledged eminence think it not beneath their dignity to devote their pens to a description of its operations. We shall, therefore, content ourselves with these remarks, and press on to the consideration of the manner in which Dr. Parrish has discharged his task.

Dr. Parrish's work is divided into five principal parts, in one or other of which are described the various pharmaceutical operations principally now-a-days in use. The first part is preliminary, and is occupied with a description of the furniture and implements necessary for a compounding department, an account of weights and measures, specific gravity, and some observations on the United States Pharmacopœia. These latter are chiefly to explain the principles on which the authors of the Pharmacopœia proceeded in adopting their nomenclature and arrangement, and incidentally an allusion is made to a most salutary provision existing in the United States for a decennial revision of this work,—a provision that might with great advantage be adopted in these countries; as every one must acknowledge that whilst constant changes in our national Pharmacopœia are most seriously to be deprecated, yet that in a period of ten years many most important changes must of necessity arise,—one class of medicines falling into disuse, another increasing in favour, new modes of combination being adopted, all of which call for a revision, which should be accomplished as each decennial period is completed.

The second part is devoted to the more strictly Galenical preparations. All of these are well described, and worthy of careful

study; our limits, however, will not permit us to do more than direct our readers' attention to them. One class of them, however, we shall extract for their information, as affording elegant formulas for preparations still sought after by the public, though not officinal in our present Pharmacopœias:—

"*Wines of Iron.*

"Under this name, a variety of preparations have long been sold in the shops. The old recipe prescribed iron filings, one ounce, to sherry wine, one quart. The solution of the iron was here quite dependent on the presence of acid in the menstruum, and, even when most successfully made, it seldom contained more than one grain of iron to the fluid ounce. An improvement on this, proposed some years ago, consisted in the solution in sherry wine of tartrate of iron and potassa nearly to saturation. A common recipe called for one ounce to a pint.

"Several new preparations of iron salts in wine have recently originated and obtained considerable popularity in this city. The following recipes were originated by my friend and former pupil, Thomas Weaver:—

Wine of Iron.

Take of Citrate of Iron, ... 128 grains.
Sherry wine,
Water,
Sugar, and
Tincture of orange-peel to make 1 pint.

Dissolve the citrate in hot water, and add to it the other ingredients in proportion to suit the taste.

Dose, a teaspoonful.

Modified Wine of Iron.

Take of Citrate of Iron, ... 128 grains.
Ammonio-citrate of zinc, . . . 32 grains.
Water,
Sugar,
Tincture of orange-peel,
Sherry wine, to make a pint.

Dissolve as in the other case.

Dose, a teaspoonful.

Bitter Wine of Iron.

Take of Citrate of Iron, ... 128 grains.
Extract of calisaya (Ellis), . . . 16 grains.
Sherry wine,
Water,
Sugar, and
Tincture of orange-peel to make 1 pint.

Dose, a teaspoonful.

"Dissolve the citrate of iron and extract of cinchona separately in hot water, adding a small excess of citric acid; then add the sugar and tincture of orange-peel, and lastly the wine. The chief secret in preserving the bouquet of the wine in contact with the iron salt is to add it after the utmost dilution."

The extract of calisaya, here alluded to—

"Is made by boiling coarsely-powdered calisaya bark in successive portions of water, acidulated with muriatic acid, precipitating the decoction with hydrate of lime, digesting the precipitate in hot alcohol till all taste is exhausted, and then evaporating the alcohol so as to leave an extract. The old-fashioned precipitated extract of bark was nearly identical with this, which is only objectionable on the score of expense.

"It contains all the quinia and cinchonia contained in the bark, besides the amorphous quinia, or chinoidine, and is an admirable substitute for the celebrated Wetherill's extract, formerly much in vogue."

Part III. is devoted to the consideration of Pharmacy in its relations to organic chemistry. In this section we have much that is interesting to the general practitioner; and in it, especially, we find the very best account extant of that most interesting product of lignin, collodion. A formula to obviate the unpleasant contraction frequently resulting from the application of ordinary collodion is mentioned, which we here introduce for the benefit of the many who, to our knowledge, have complained of this inconvenience:—

"The contraction of the collodion pellicle in drying is a decided objection to its use in some cases. C. S. Rand proposes Venice turpentine as the best addition to obviate this effect.

Rand's Modified Collodion.

Take of prepared cotton, ...	℥ij.
Venice turpentine, ...	℥ij.
Sulphuric ether, ...	℥v.

"Dissolve, first, the cotton in the ether; add the turpentine, and, by slight agitation, complete the solution.

"The resulting collodion, when applied to the skin, forms a transparent pellicle, more difficult to remove than that of ordinary collodion. Being more pliable, it yields to the motion of the skin, and will not crack even after several days' application. It might be supposed that the turpentine would render it more irritating, but this does not seem to be the case, owing to the absence of that mechanical stimulus so powerfully displayed in ordinary collodion. The addition of two drachms of mastic to the above may be at times advisable, if the pellicle be required of great toughness and strength;

but it dries more slowly, and remains opalescent longer than that containing Venice turpentine alone. This preparation is more suitable for the purpose of a varnish than as an application to the skin, and is especially adapted to coating labels on vials, which it renders impervious to cold and hot water and alcohol. Castor-oil has also been found to be an excellent addition to collodion for the prevention of this contraction."

One most valuable use of collodion, however, is not alluded to; and, as we have so often derived singular benefit from it in the treatment of what but too frequently proves both a troublesome and painful complaint, chilblains, we shall mention it here. It is simply this: to paint over the inflamed surface with a solution composed of two ounces of collodion and one drachm of vesicating collodion. It matters not whether the surface be broken or not; if unbroken, so much the better; the chilblains will disappear. If broken, they will rapidly heal under this plan of treatment. We have never known it to fail since first we have had recourse to it; and its simplicity, and the ease with which it can be applied, are not the least of its recommendations.

The chapter on the alkaloids is, taken as a whole, by far the very best we know of on the subject in the English language. The introductory remarks are well written, and the various processes are ably described. We cannot too strongly recommend it to the student desirous of becoming thoroughly master of this most complicated portion of organic chemistry. Occasionally we find some few lapses, but, as a whole, the article is much more than an average one. Amongst the omissions, however, in this department, we notice one most important one: it is when our author is discussing the treatment for poisoning by strychnia. He omits all mention of the plan suggested by Professor Haughton, of this city, of treating it by nicotine—a fact the more remarkable, inasmuch as, not very long ago, it was most successfully put to the test in a very interesting case that occurred in the United States. A book emanating from an author resident in the country where the antidote had successfully gone through the *experimentum crucis* surely should have it, at all events, included amongst his remedial measures.

That portion which is devoted to the description of the inorganic pharmaceutical preparations is, in our opinion, the weakest portion of the author's work. The mode of preparing the various salts, in but too many instances, is described in a very superficial manner; and, in some instances, were we to follow the author's directions alone, we should never succeed

in our operations. To illustrate this by an example, we shall submit for our readers' consideration his directions for the preparation of the *Fer réduit:*—

"*Ferri Pulvis*, U. S. (*Iron by Hydrogen. Quevenne's Iron.*)

"Prepared by passing a stream of hydrogen over the calcined subcarbonate (dry sesquioxide), contained in a gun-barrel heated to low redness, by which the oxygen of the oxide combines with hydrogen, forming water, and leaves the metal in a very fine condition."

Now, we put it to any of our readers who have ever attempted to make this preparation, what would be the result if they only followed Dr. Parrish's directions? Such of them as have not done so we shall inform, that, whatever they might get, they would never get the desired preparation, as a most important step in the process has been omitted—*to continue passing the current of hydrogen gas through the gun-barrel until the iron has cooled;* otherwise, the iron would abstract oxygen from the air again with such rapidity as to generate an amount of heat sufficient to set fire to paper if thrown on it,—furnishing us, in fact, with a very good example of a pyrophorus.

Many other examples of carelessness might be adduced, both in his descriptions of the steps of the processes, and of his explanations of the reactions that ensue. For instance, in describing the method of preparing the basic carbonate of zinc, not one word is said about the effervescence that ensues on mixing the ingredients—a most remarkable and, *a priori*, a most unexpected phenomenon. His explanation of the process for preparing chloride of zinc is not explicit enough, and what there is of it is anything but correct, his explanation of the part played by the nitric acid and the chalk being altogether wrong. We shall insert here his explanation, and then give what we consider to be the correct one:—

"The chloride of zinc being first formed by the action of the muriatic acid on the metal, the next step is to separate the iron derived from the muriatic acid and from the zinc; this is done by the use of nitric acid, which peroxidizes the iron, and, on evaporation to dryness, dissolving, and filtering, it is left behind. The pure chloride is now digested with chalk, to free it more completely from iron, by neutralizing any free acid. Another method, which is effectual in removing iron, is to add to the solution, as at first formed, a little freshly-precipitated hydrated carbonate of zinc; filter and evaporate."

Now, the nitric acid is not used here with the view of peroxidizing the iron, but acts by setting free chlorine from the

hydrochloric acid, which converts the proto- into sesqui-chloride of iron, which, by the chalk subsequently employed, is converted into sesquioxide of iron that precipitates, chloride of calcium held in solution, and carbonic acid that escapes. This equation will explain our view of the reaction:—

$$Fe_2Cl_3 + 3(CaO, CO_2) = Fe_2O_3 + 3Ca\ Cl + 3Co_2.$$

Many other examples of a similar kind could we urge against Dr. Parrish's present production; but we shall content ourselves with the one general complaint of the omission of any attempt to explain the reaction that occurs by chemical equations. This cannot be justified by the plea that such would be foreign to the scope of the work, as such an argument would justify the omission of all attempts at explaining the processes; whilst our author in almost every instance gives us his own commentary, but without the use of symbols, whose importance is now-a-days so universally admitted that their paramount utility requires no vindication at our hands.

Part V. is devoted to extemporaneous Pharmacy, and contains an admirable resume of the subject, together with some very good formularies. We recommend it to our readers' attentive consideration, as in it they will meet with some things that may prove of use. The work concludes with an appendix, in which we find some admirable hints as to the management of the sick-chamber, together with directions for the preparation of the more usual articles of the invalid's dietary.

We have now but to allude to the illustrations, with which the work is almost lavishly furnished. They are selected with judgment, and admirably executed. One illustration, however, struck us as being a strange one, and certainly (unless our transatlantic cousins are sorely belied), in our minds, a most unnecessary one: it is that of an ordinary *corkscrew.*

In conclusion, we have but to say that, although we have been obliged to take occasional exceptions to part of his work, yet that on the whole, both in matter and in the manner in which it has been brought out, Dr. Parrish's Practical Pharmacy is a credit to himself and to American literature. We look on it as a standard work, and wish it and its author every success.

On Diseases of the Throat, Epiglottis, and Windpipe. By George D. Gibb, M. D., M. A., Physician to the St. Pancras Royal Dispensary. London: Churchill. 1860. Post 8vo, pp. 182.

The author of the present volume is already well known as an accomplished physician. His carefully written treatise on "Hooping-Cough," and his work "On the morbid states of the Urine," have secured for him a high reputation. With these works we have nothing now to do; they have been already most favourably reviewed by us, distributed widely, and received well by the profession.

In the preface to the volume forming the heading of these remarks, the author clearly details the plan of the work,—its construction:—

"In the arrangement of the subjects no particular classification has been adopted, but they have been considered in the ratio of their importance, and, perhaps, their frequency; and my endeavours have been rather to simplify and render clear, than to complicate, by giving a multitude of minute subdivisions of disease."

Though modest this avowal, yet we have in this small work thirty-two chapters, each bearing an ample amount of information, deeply compressed, and that consonant with the views of the best thinkers of the day. At the same time, we are indebted to the author for much that is valuable, for many practical and original observations. Reference has been made on many occasions to the opinions of others, and in every instance ample testimony accredited to each writer, both by name and reference. We cannot afford room to enter into an analytical review of this work; but, after a careful perusal and consideration of every chapter, we can with confidence predict its success. The following passages afford a good idea of the vigour and style of its author. The diagnosis of the phthisical laryngeal ulcer is thus described:—

"Although, perhaps, the symptoms of ulcerated larynx, when thus associated with consumption, differ in no material respect from the other forms of ulceration previously described, beyond the increase in their severity; yet there is an essential peculiarity in the constitution of these ulcers which no person that I am aware of has demonstrated histologically, and that is, the presence of real tubercle in their structure (I leave out, of course, their naked appearances). This I have determined, by the aid of the microscope, on many occasions, and its seat seems to be especially the submucous tissues. Perfectly analogous is the condition of the ulceration of the smaller intestines

in phthisis, which, if examined in a similar manner, will be found loaded with true tuberculous deposits, as I have noticed as far back as in 1845. Thus, then, the character of the ulcers in the larynx, associated with pulmonary consumption, is perfectly distinct, and altogether different from that which is present in idiopathic ulceration of the same part. This fact I most particularly insist upon, the correctness of which has been tested over and over again in my own hands: it has been surmised by others, but never actually proved."

Again, the description of the calcification of the laryngeal cartilages is very apposite:—

"Calcification of the laryngeal cartilages may be suspected in the class of persons who are subject to the saccharine throat, described in the next chapter. When the rings of the trachea are likewise implicated, the flexibility of this tube is equally affected with that of ossification, and there is a difficulty experienced in the expulsion of the phlegm. As I have mentioned before (Trans. Path. Soc., vol. x.), this simulated ossification in persons of the age of from thirty to forty years, and, in many cases, much younger, is an indication that life is advancing rapidly to a termination, the age of maturity is passed; and when found, for example, in a person of thirty-five years, taken with a general fatty degeneration of the tissues, associated with atheromatous deposits in the coats of the blood-vessels, and, probably, an arcus adiposus, life has nearly run its span, although the patient may have a most healthy and ruddy aspect. It is in subjects of this kind that the saccharine element predominates, which becomes rapidly transformed into fat, and gives rise to a condition of body which is analogous to that of old age."

We are tempted to quote more largely from this valuable and elegantly written volume, but, on consideration, prefer to recommend its purchase by every practitioner, to be read entire, and then carefully placed in his library for reference. No student in medicine should be without this book, as it will admirably prepare him, on those affections upon which it treats, for those competitive examinations, now the ladder by which the diligent may climb to distinction and wealth.

Hemorrhoids and Prolapsus of the Rectum: their Pathology and Treatment; with especial reference to the application of Nitric Acid. By HENRY SMITH, F. R. C. S. 2nd Edition. London: Churchill. 1860. Fcap 8vo, pp. 108.

THIS is intended to be purely a practical book; and so it is, we strictly admit, from a careful perusal of its contents. Ver-

biage has been laid aside, and facts carefully fixed upon, quickly detailed, and impressed most forcibly upon the reader. This encomium, probably the strongest that could be penned, is freely bestowed by us, because we consider it a work essential to the student and useful to the practitioner.

The chief feature most prominent in treatment is in relation to the application of nitric acid to certain conditions of the rectum. The author has given the originator of this method of treatment the full merit of its introduction. He, like a practical man, values and writes about what has supported him in his need and difficulties—that method which has rendered his cases satisfactory, his practice successful. Still, we think the great and most important practical lesson relative to the application of nitric acid to certain vascular tissues and hemorrhoidal excrescences and relaxed conditions of the rectum, has not been sufficiently ceded to the names of Houston and Cusack.

It is now seventeen years since Mr. Houston's first most valuable contribution on the subject appeared in the pages of this Journal[a]; and again, after two years' further trial, another of these practical communications, even more intrinsically valuable, abounding in facts, was published likewise in our pages[b]. In these two papers we find the most admirable description of the morbid changes referred to—in fact, the best extant. Every deviation and alteration from a healthy change is graphically depicted. Anatomical, physiological, and surgical knowledge of rare attainment has each been brought to bear with the greatest acumen upon the question, the value of this peculiar treatment, the one by nitric acid.

When we write these truths, we wish to augment the value of Mr. Smith's contribution to surgery; for he has carefully considered the subject; he quickly appreciated the value of the teachings of this sound pathologist and surgeon; and we earnestly trust his exertions may be followed by a just reward for his energy and endeavours in pressing these wholesome truths upon English surgery. At the same time we admit that, in the best class-books of the day, the question has been fairly dealt with.

Mr. Smith's book is carefully and, as we said before, practically written, and valuable to the student and the practitioner. Let neither be sceptical because of its small size; for, rest assured, if its contents be understood, it will prove advantageous and full of benefit in difficulties and trouble. We speak after some experience in these matters.

[a] First Series, vol. xxiii., p. 94, 1843. [b] Ib., vol. xxvi., p. 32, 1845.

Stricture of the Urethra: its Complications and Effects. A Practical Treatise on the Nature and Treatment of those Affections. By ROBERT WADE, F.R.C.S., &c. Fourth Edition, with Engravings. London: Churchill. 1860. 8vo, pp. 354.

WHEN a work reaches, within a comparatively short period, a fourth edition, we are forced to admit that it has been favourably received, and has fulfilled, to some extent at least, the author's expectations. The first edition of Mr. Wade's Treatise on Stricture of the Urethra attracted the attention of the profession, not only because of its merits as a work, but in great measure owing to the new views put forward by the author regarding the treatment of the disease by caustic. In every successive edition some new material was added to the work; and the arguments in favour of caustic were maintained, and more forcibly advanced, through the aid given by enlarged experience: and now the book has been so much replenished with instruction as to justify us in viewing the fourth edition almost in the light of a new treatise. The work is divided into thirty-one chapters. The first gives the definition of stricture; its pathology, its seat, and the effects it produces on other parts of the urethra. The second chapter deals with the causes of stricture. The author divides the causes into "the remote or predisposing, and into the more immediate or exciting." He draws attention to a fact connected with the predisposing causes, that has been neglected or overlooked by practitioners, yet which is of the utmost importance to be borne in mind, seeing how much it must influence the prognosis and treatment of the disease; we allude to "hereditary constitutional tendency," and "certain states of the constitution, either natural or acquired." What those peculiarities of constitution are, we are not told by the author, at least in absolute terms; but there can be no doubt that struma is the great constitutional predisposing cause of stricture. Gonorrhœa, so efficient in sowing the seed which more immediately generates the disease, receives most of its power in this respect from the presence of the strumous diathesis; it is the latter which chiefly gives to gonorrhœa the tendency to exert pernicious effects on the urethra. Gonorrhœal urethritis, in its true character, is marked by specific limitation and tendency to speedy cure, as illustrated by the case of a young, healthy individual, exempt from those influences which are calculated to aggravate and perpetuate the urethral irritation. But when the strumous diathesis leagues itself with gonorrhœal disease, the latter loses its own disposition, and

modified symptoms of an obstinate and irregular kind arise. The urethral inflammation transgresses the "specific distance," and, running along the canal, it arrives at the membranous part, where it lurks, in a chronic form, for a long period. From this it may extend to the prostate gland, to the bladder, and even to the kidneys,—exciting in them an amount of irritation which often exists long, and seriously affects the health. More usually the inflammation confines itself to the urethra, or, if it have extended beyond the canal, it returns to it, and there steadily works mischief, often irretrievable, producing "irritable urethra," and laying the foundation of stricture. There is no more interesting and important study than that of investigating constitutional influences with regard to urethral affections. It is a subject which has been too much neglected by authors.

The third chapter treats of the varieties of stricture :—

"Strictures of the urethra, for practical purposes, may be classed under the following heads.—1. The Dilatable Stricture. 2. The Simple Chronic Stricture. 3. The Impermeable Stricture. 4. The Irritable Stricture. 5. The Imflammatory Stricture. 6. The Elastic Stricture. 7. The Spasmodic Stricture. 8. The Traumatic Stricture. 9. The Cicatricial Stricture, from ulceration at the external urethral orifice."

Though this is a very comprehensive classification of strictures, there are one or two points in it to which we feel inclined to take exception. We prefer a simpler classification, and we think that such an one, more logical, and as comprehensive, might be found. In speaking of spasmodic stricture, the author observes :—

"By many surgeons it has been supposed that spasmodic stricture may occur in any part of the urethral canal. This supposition appears to have arisen principally from the circumstance of the instruments having been grasped by obstructions situated anterior to the bulb. An irregular or excessive action of some of the muscular fibres described by Handcock and Kölliker, which have been traced by the former traversing the whole course of the urethra, has, since their discovery, been regarded as sufficiently explanatory of the occurrence of spasm in the anterior portion of the canal.

"These muscular fibres are, however, so extremely minute, that I can scarcely imagine them capable of possessing the power to grasp a bougie with the force which is occasionally experienced in obstructions anterior to the acceleratores urinæ muscles. It is certainly no uncommon occurrence in irritable urethra, for instruments to be obstructed in different portions of the canal anterior to the perineal muscles, when there appears to be no thickening, or disease

that can be detected at the seat of obstruction. But in such cases it will, I believe, be found that there is more or less of morbid sensibility of the urethral mucous membrane at the point where a bougie meets with obstruction; and that it is very probable the afflux of blood to the sensitive portion of the tube may be, to some extent, the cause which prevents the advance of the instrument. This is the cause which has been most commonly assigned for the occurrence in question. It appears to me, however, that the obstruction to, or grasping of, an instrument under the circumstances just mentioned, is caused principally by the unyielding nature of the elastic tissue of the urethra, which participates in the irritability of the lining membrane of the canal.

"I do not think that the exceedingly minute muscular fibres surrounding the urethra are capable of exerting any more powerful effect upon an instrument than that suction-like or clinging action, which is so frequently experienced on withdrawing a bougie from an irritable urethra, when it may naturally be supposed these tiny muscles are peculiarly predisposed to contraction; a very different sensation, however, to that of the firm grasp of a spasmodic stricture at the curved portion of the canal. That a morbid sensibility, often of no slight degree, exists at the spot where a bougie is obstructed in the cases in question, is evident from the increased pain caused by the instrument at that part of the canal, and from the relief usually afforded by a gentle application of caustic to the lining membrane at the seat of contraction."

The same views regarding the grasping of instruments by the urethra anterior to the bulb have often struck ourselves, and we have invariably maintained that this phenomenon alone furnishes no very substantial argument in favour of the organic muscularity of the urethra. The force of muscular fibres must be in the ratio of their size; and when the minuteness of those in question is considered, it is impossible to see how they can exert that grasp on an instrument which is frequently experienced, especially in a case where much irritability of the urethra has existed. Sudden engorgement of the mucous membrane can only account for the phenomenon to a partial extent, and we are inclined to agree with the author, that the principal cause is due to "the unyielding nature of the elastic tissue of the urethra, which participates in the irritability of the lining membrane of the canal."

Passing by the fourth, fifth, and sixth chapters, each of which we can recommend for careful perusal, we come to the seventh chapter, which dwells on the more important subject, the treatment of stricture.

"There are probably few diseases," observes Mr. Wade, "that require greater skill and judgment in their management than ob-

structions of the male urethra. There are none, I believe, in which more mischief is done by rough handling; very great care and gentleness, with no ordinary share of patience, being absolutely essential for the successful treatment of many of the more intractable cases. In its diseased state, the urethra often becomes highly sensitive; and when the introduction of instruments is required, to be used with advantage to the patient, it is evident that lightness of hand and delicacy of touch are indispensable qualifications in the surgeon who employs them."

We fully concur in these remarks; and especially agree with the author that if its diseases are to be successfully treated, the urethra must be viewed physiologically, and not merely according to the morbid change which it may have undergone. How few, however, act practically on this doctrine! It has surprised us how surgeons so often seem to forget that the urethra is a highly organized and sensitive canal, and that stricture must of necessity exalt its sensibility. The urethra is dealt with as if it were a tube of inanimate material, and the stricture a mere inert obstruction; and, with such purely mechanical notions, it is not to be wondered at that the means employed should be equally mechanical. Too much gentleness cannot be observed in the introduction of bougies and catheters for the cure of stricture, nor can the surgeon who wishes to treat the disease successfully expend too much exertion in endeavouring to refine his tactile sensibility. Some possess an acute sense of touch by nature, but most can acquire it by practice; and even those who are naturally endowed with it can and ought to exalt it by practice. If any one should be unable to acquire this much-to-be-desired gift, he is not fit to undertake the management of stricture by the method the surest and safest. If he do, and that he deals roughly with the urethra, the treatment will, to a certainty, be resented by the constitution or by the part—often by both; and the case is rendered far worse than if it had never been interfered with. The division which the author makes of the means adopted for the cure of stricture is the same as that generally found in books, viz.:—1. Dilatation; 2. The application of escharotic substances; 3. Incision of the stricture either within the urethra or without.

We shall leave the first method of treatment unnoticed, in order to dwell the longer on the second, to a very elaborate account of which the eighth chapter is devoted. However great our opposition to the employment of caustics in the treatment of stricture, we feel bound to pay a tribute of admiration to the author for the candid manner in which he deals with the subject, and the little prejudice he exhibits in enforcing his views. He says:—

"In placing fairly before the profession the results of my experience of the method of treatment by *escharotics*, I can assure them that it is not from any hastily formed views upon this subject, from the attainment of success in a few instances, but from more than twenty-five years' observation of the good effects of caustic potash in bad cases of stricture, that my conclusions have been deduced."

And then, in advocating the use of the potassa fusa in preference to that of other escharotics, he simply observes:—

"From the result of no inconsiderable experience of the use of potassa fusa in many intractable forms of urethral obstruction which had resisted the ordinary means of treatment, nitrate of silver included, I am convinced that the excellent effects of the former caustic are but little known to the generality of surgeons."

If authors generally were to enforce their favourite doctrines with equal good sense, and on similar grounds, their arguments would prove more effective, and the cause be all the better promoted. There are some minds, however, which enthusiasm blinds, and some judgments so warped with prejudice as to be incapable of coming to a fair and candid conclusion. In the estimation of such, that which is good in one case is good in all; the fancied thing has universal applicability, its sway is unlimited, and it knows no superior influence. With such enthusiasts it is needless to argue,—better far to leave them in undisputed possession of their happy fancies; but we rejoice at not being obliged to beat a retreat from the contest of opinions in the present case. Notwithstanding the strength of the author's convictions in favour of caustic, he does not urge its adoption in every case; and he rests his opinion regarding it, not on visionary grounds, but on substantial data, furnished by twenty-five years' practical experience. He considers that potassa fusa acts "beneficially upon stricture, by relieving irritability and inflammation, by promoting absorption, and stimulating the congested vessels to contraction; also by its dissolvent powers." We entertain strong objections to the introduction of any caustic agent into the urethra; but undoubtedly can recognise in the use of the potassa fusa an important advantage over that of the nitrate of silver. The latter, while too weak to destroy an indurated stricture, is powerful enough to produce mischief, calculated to leave behind it serious results; and certainly, if a stricture is to be destroyed by caustic, a preparation adequate to the purpose should be resorted to. It ought to be a rule in the practice of surgery—for it is a sound one—that of two measures, each apt to induce evils, similar and unavoidable, that should be selected which

is most efficient for the purpose in view, even though the flame it kindles be the more vivid. For this reason the potassa fusa is preferable to the nitrate of silver, whose caustic power is feeble, yet which is capable of exciting a degree of urethral disturbance not readily quelled. But why use caustic at all in the treatment of stricture? We cannot boast of quite so much as a twenty-five years' experience; still, many years of professional life have rolled over our head, and during that period we never saw a case of stricture in which the use of caustic was *absolutely* necessary, and only resorted to it in about three instances;—in one to destroy a small hard knob, which seemed to intercept the free passage of instruments; in the other two, merely with the object of destroying morbid sensibility, on the principle recommended by Sir Benjamin Brodie. However, we are open to conviction, and we do not pretend to aver that we might not yet meet with a case, or more than one, in which the use of the potassa fusa might be advisable or necessary. We now leave this interesting discussion; and, as we do so, recommend the reader to study the pages of the eighth chapter with a candid and impartial mind; and, should he adopt the course of practice advocated therein, to give it a fair trial, and not to draw hasty or imperfectly formed conclusions.

Space limits us, and we must press forwards. The eleventh chapter treats of the external division of stricture, which includes the much-vexed question regarding the "perineal section." On this subject Mr. Wade exhibits fair play, and brings no little information in support of his arguments. On the whole, we take much the same view as he does. We have always considered Mr. Syme's operation in a two-fold light: first, in its character as an operation; second, with respect to its objects. As regards the mere operative proceeding, it is perfect, and may be numbered amongst the many proofs of chirurgical skill manifested by its proposer. The merit due to Mr. Syme is, in our estimation, in no degree tarnished by the fact to which Mr. Wade alludes, of the operation having previously been practised in France. So far as the objects of the operation are concerned here, it is faulty; for while Mr. Syme himself has failed to prove by reasoning, or through the superior force of statistical truth, that it can fulfil the purposes for which it was designed, certain other surgeons, who have practised it, condemn it as dangerous and unnecessary. The author, as is not surprising, places his own favourite method in comparison with it. He says:—

"With regard to Mr. Syme's operation, it is at present my conviction, that when an instrument, however small, can be passed in-

to the bladder, the persevering application of caustic potash will accomplish more enduring good for the patient, if there be time for its operation, and life be placed in no immediate peril, than can be effected by perineal section, and without the slightest risk of a fatal occurrence. My reasons for such an assertion are, that I have lately, by the application of potassa fusa, succeeded in several cases when no hope had been held out to the patients but perineal section; and in two of them, both nitrate of silver and caustic potash had been used, but the latter neither with that confidence nor perseverance requisite for its efficient action in such cases."

And he sums up the comparison in the following words:—

"From all I have seen and read of division of strictures by perineal incision,—from my knowledge of the powers of potassa fusa in the removal of urethral obstructions, there are few cases of retention of urine from that disease, in which, were an operation indispensable, I should not prefer puncturing the bladder."

We believe the following is a remark that cannot be denied:—

"Each passing year has, in fact, borne additional testimony of the fallaciousness of the promises which were held out to the public by Professor Syme, on his announcement of having discovered 'a simple and easy mode of curing permanently the most difficult cases of urethral stricture, and unattended with danger to life.'"

We regret being unable to follow the author through the other chapters of his work. There are points in these upon which we may feel inclined to differ from him; but we would not act fairly were we not to express our *general* approval of the precepts therein contained. Difference of opinion must exist on points of theory and practice; but that reviewer is the fairest and the wisest who refrains from hypercriticism, and contents himself with exposing marked fallacies or decided errors. On the whole, we can affirm that we have perused this work with pleasure and profit; and we feel happy in being able to recommend it to the student and to the practitioner as a good and useful guide in stricture of the urethra.

Foundation for a New Theory and Practice of Medicine By THOMAS INMAN, M. D., Physician to the Liverpool Royal Infirmary. London: Churchill. 1860. Fcap. 8vo, pp. 374.

THERE are two great antagonistic principles, which, in all ages of the world, have swayed mankind, and maintained with each other an incessant and internecine conflict, namely, the Old

and the New. The former of these principles requires from its disciples an unconditional respect for forms of ancient date and dogmas of traditional reputation; the latter contemptuously rejects such claims as antiquated, and boldly declares for progress and reform. "Stare super antiquas vias," is the watchword of the one; that of the other is "Semper noviora." The conservative prejudices of the Old would cherish even an abuse, so that it were of long descent; the love of change of the New, would ignore almost a principle of our nature, if exhibited in an antique costume. Neither extreme desires to admit that it is powerless by itself; that without the stand-point of the old to proceed from, the new would make but little advance, and without the advance of the new, human knowledge would become stationary or even retrograde.

It is, then, beneficial in its results that the spirit of inquiry in the human breast tends to receive novelties with favour. A daring and successful innovator, when he makes a useful discovery, claims and receives the homage due to superior genius. Time, the great leveller, determines his subsequent position. But it happens of necessity that claims are sometimes urged for merits which are not novel, or for novelties which are not meritorious. When, therefore, long sanctioned opinions or customs become the subject of question, it is doubly important to hold the balance steadily and impartially between the Old and the New, without bias on the one side or scepticism on the other.

The work whose title is at the head of the present article, from the importance of the subject, demands such patient examination, proposing, as it does, a "foundation for a new theory and practice of medicine." We profess here, *in limine*, that we are not among the number of those who contend obstinately that the present state of the art of healing approaches very near perfection. More than two thousand years ago the father of medicine wrote his famous aphorism, "Life is short, and the art long; the occasion fleeting, experience fallacious, and judgment difficult," and each succeeding age testifies truly that consummate skill is a thing to be hoped for by few,—that it is the result of long and assiduous and weary probation, and neutralized too often by the uncertainty of human life. We are forced to admit that our art possesses few general formulæ, and, as yet, none of the grand fundamental principles from whence proceed the exactness of application and the wideness of range which we admire in the physical sciences. Its chief guides are observation and experience; its best mode of reasoning is not *a priori* from cause to effect, but *a posteriori* from effect to cause.

Admitting, then, these natural defects, we are always ready to hear with deference any well-intended effort to remove them. But we must carefully discriminate between its innate imperfection and the adventitious circumstances which impede its advancement; among the latter we must reckon the constant fiction of false hypotheses. We possess facts in abundance; where we fail is in "the colligation of those facts under an appropriate conception," to use the language of Whewell, so as thereby to discover a general law.

In the work before us the author professes to have arrived at some such general law, and he enunciates it thus:—"That the theory and practice of medicine ought to be based upon alteration in *power* or vital *force* rather than in changes of *structure*." It is this conclusion which induced him to give the title which he has done to his essay, and he believes that it is a basis on which a theory and practice of medicine may be founded, of greater soundness than has hitherto been attempted.

The putting forward of a new foundation is *ipso facto* a condemnation of the old, but the author does not confine himself to a virtual censure; the first sentence of his preface is a gage of battle against the established opinions. "From the period of his reading the first book," he tells us, "on the Theory and Practice of Medicine, which was presented to his notice, the author has been struck with the absence of all trustworthy *principles* in such works." It is manifest that this is a bold defiance. The trumpet here gives no uncertain sound. We are startled by the loudness of the tone, and mechanically we ask ourselves, can the author be right in this sentence? Have all those systems of medicine from Hippocrates to Watson, to which we recur for guidance through our practical difficulties, no intrinsic soundness, after all? Are those luminaries of our art, the Laennecs, and Hollands, and Graves, and Coplands, whose brilliancy we have so fondly admired—are they, like meteors, only leading us astray? Such, as far as we can gather it, would appear to be the opinion of the author. It is true that he allows our systematic writers a certain amount of negative merit; their descriptions of disease are more or less accurate; their nomenclature may pass muster; they indulge in the usual speculations upon the causation of disease; "and they give an account of what they consider to be the best methods of cure." But he proceeds to enumerate their omissions and shortcomings; "on the broad principles upon which that treatment is to be conducted, they are absolutely silent; or, if they do give reasons, such are based upon presumed experience and dogmatic teaching, and not upon a rigorous appeal to nature."

There is, however, a single exception to this universal amount of error: "from this category, the author must exclude the recent work of Dr. J. H. Bennett, whose philosophical precision he fully appreciates, and warmly admires." These, as Fluellen says of Ancient Pistol, are "brave words;" a writer who sweepingly and unhesitatingly charges all his predecessors, but one, with erroneous teaching requires, however, something more than words to support his positions.

Let us see what are the charges which Dr. Inman makes against the ancient and modern teachers of medicine; we shall give them in his own words:

"Disease in such treatises is looked upon as if it were an entity, and the prevalent metaphor is, that it invades the body, and must be overcome and driven out. Medicines are spoken of as weapons or remedies, and 'a powerful remedy' is a name given to one whose onslaught upon a disease is reckoned as energetic as that of the disease upon the body. In consequence of this, the student is educated with the idea, that the patient must necessarily be well as soon as the disease is driven out, and the natural result follows, viz.:— That endeavours are made to restore health by overcoming disease, instead of endeavouring to cure disease by restoring health."

From the preceding passage it would appear that the great mistake hitherto committed, and which has vitiated the whole theory and practice of physic, is the regarding disease as an entity. Here we ought, perhaps, to pause, and ask the author what he means by an entity. A clear exposition of his meaning would be desirable, as we are left to our own conjectures whether it be a metaphysical or real entity which he refers us to. From the context we are led to conclude that it is the latter, as it means something which has a real existence beyond its mental conception. By attributing, therefore, this supposition to all other teachers save one, as a signal mistake which they made, he must evidently hold the contradictory opinion himself, and as the opposite to *ens* is *non-ens*, he thus must regard diseases as non-entities, that is, things, which on the idealist principles, do not exist in nature, but are merely abstractions of the mind. We may be wrong, but we think that there is something disagreeably real in a consolidated lung, or a cancerous breast, and no amount of plausible argument could convince us that these are nothing but delusions of the imagination. We do not like to suppose that the author seriously meant to charge his opponents with holding the notion that, when a man is said in ordinary parlance to be attacked by disease, a real personification of the latter is kept before the mind of the physician as a thing to be "driven out," as it was from the demoniacally

possessed of former times. Such an absurdity does not deserve confutation.

But, according to Dr. Inman, there is a serious practical mistake flowing from the above-mentioned opinion, viz., regarding medicines in the light of weapons or remedies. "Patients," he says, "have suffered severely from the erroneous ideas entertained by physicians, of the best means of *combating* disease." And again,

"We are told by the most popular of our modern authors, that blood-letting is the most effectual and important of all the direct *remedies* of inflammation; next in rank is mercury; then purging, antimony, digitalis, colchicum, &c. These are to be given to overcome the disease, and there the account ends. There is not a word about the patient and his condition when the inflammation is over and done with; a condition which experience tells us is generally a very deplorable one."

We fear that we must plead guilty to the martial character of our medical phraseology, but we confess that we were not aware before of its dangerous influence upon the public welfare. When a patient requires to be bled, it seems of little importance whether the predominant idea in the physician's mind is, that blood-letting relieves pain, or subdues inflammation.

Perhaps some of our figurative language may be traced to popular opinions: "plebs amat remedia," was an old established maxim; perhaps more is owing to our *amour propre*, which does not wish to be regarded merely as a passive spectator of the efforts of nature to throw off the disease. Indeed, we strongly suspect that the author himself, notwithstanding the above reclamation, is not more free than others from this amiable weakness, for we read in the present work that "opium overcomes sleeplessness," that "gallic acid controls hemorrhage," that "tannin is a strengthening remedy," &c. Besides, unfortunately, many of our remedial agents are really weapons, and severe ones. Our surgical armamentarium is as well supplied with instruments of torture as a military arsenal, and few will question the pretensions of the actual cautery, no more than they would the thumbscrew. But, after all, it is as much to the nature as to the name of the weapons, that Dr. Inman objects. One of his aphorisms is, that "a plan of medication which does nothing to depress the vital power is practically superior to one that does depress it." Such a principle would sweep from our armoury the whole stock of what we call our antiphlogistic remedies. There is little doubt but that

these depress the vital power, and thus, according to the above rule, are practically inferior to non-depressing modes of treatment. But what plan are we to substitute for treating acute disease if we reject this. Let us hear Dr. Inman—

"Homœopathy, with its infinitesimal doses in its early days, was such a plan, and, consequently, its success was comparatively great; but it is untenable as a system, because it ignores the principle of life as the chief power in the body; because it attributes powers to substances and to quantities which are absolutely inert; because it excludes 'systematically' from its arsenals, agents of known power in restoring strength to the constitution; because, it attributes to an irrational cause efforts which must be attributed to a rational one."

He thus gently and, seemingly, with a sigh of regret, puts Hahneman aside in his systematic capacity, though he admires the success of his mode of treatment. But he goes a step farther in comparing allopathy and homœopathy: the intelligent student who sets about determining the respective pretensions of these rival sects, and tries them by the two competent tests of rapidity of cure, and amount of mortality, "finds to his profound astonishment that Hahnemann and his early followers were able to demonstrate that they had the advantage over the older school of medicine, both in reduced mortality and duration of illness. This fact being established, and it would be ignoring the rules of evidence to deny it, the next question" (for the intelligent student) "would be whether there was not a principle wrapped up in homœopathy, as there was one in the use of the weapon-salve. The natural solution to this query would be the same as in days of yore, viz., that the value of the system consisted in letting human nature alone, for of the potency of the twentieth or fiftieth dilution of a drug, it is irrational to speak."

In the preceding passage, the superiority of the unaided efforts of nature, and the aiding efforts of homœopathy to the generally received mode of treatment, certainly comes on us by surprise, and we share in the profound astonishment of the student. Nay, more, if it be true that the *vis medicatrix naturæ* is systematically impeded by the art of medicine, a long and terrible reckoning lies against the promoters of the latter. If there be greater success in letting human nature alone than in the best devised method of treatment, the conclusion is inevitable, that the whole art of medicine is a gigantic delusion, if not worse, a system of unmitigated fraud. What is it but a meretricious art, and what honest man, if this be proved on

better data than Hahnemann's statistics, would not abjure such false pretensions, and rather—

> "Break his staff,
> Bury it certain fathoms in the earth,
> And, deeper than did ever plummet sound,
> Should drown his book."

On the other hand, if it be not true, what is the use of such misrepresentations? We open Dr. Inman's work, and we read several cases manifestly benefited by judicious treatment. Would it not be ill-natured in us to conclude that these are exceptive cases, and that a similar happy result does not follow in the practice of his neighbours? We are glad to find that even the author allows us a loophole of escape, a way to retain our patient's confidence and our own peace of mind. Can nature, he asks us, be assisted in any way, or must we be content, after years of painful toil, to say that art can do nothing? Let us consider in what way the author answers the question—

"Disease is simply a departure from health, and recovery is simply a restoration to health; and the broad principle which must underlie all theory and practice presents itself as a truism thus—to cure disease, we must bring back the patient to health."

Without stopping to comment on the substitution of the important little pronoun "we" in the preceding "truism," instead of the *vis curatrix naturæ* which he previously advocated, the proposition looks very like reasoning in a circle, viz., to cure disease, we must bring back the patient to health; and, to bring back the patient to health, we must cure disease. The subject and predicate appear to us identical. But granting, for argument's sake, that they are not the same, we protest that, while we are able to conceive the common-sense view of first subduing the inflammation of an organ, and thereby restoring its equilibrium with the rest, as a preliminary to returning health, we feel at a loss to know how we could well begin at the other end, that is, look to the general condition of the system, and let the organ take care of itself. But the author finds—

"That absurdly simple as this truism appears, it involves an abstruse question, which ought to be constantly present to the mind of every practitioner, viz., on what principle do I endeavour to restore an individual to health when I use medicine in doses which would make a sound man ill."

As he holds such a course to be erroneous—

"We should," he thinks, "investigate anew the action both of drugs and articles of diet, not as heretofore upon disease, but also upon life and health."

We have not the least objection to such an investigation. Indeed we believe that it is not a new proposal, having been long ago carried into effect by our scientific German collaborateurs; but as a criterion for the adoption or rejection of a medicine, we consider it to be altogether unsound. It is not unlikely that our whole Pharmacopœia would shrink into insignificance under this searching test. We give a dose of rhubarb to a healthy child, and he gets forthwith uneasy sensations in his stomach, which terminate, after manifest symptoms of disgust, in the expulsion of the intruder; are we then to reject rhubarb as a drug for the sick child because it made the sound child ill? We administer five-grain doses of quinia to a healthy man, every three or four hours; he gets headach, ringing in the ears, and sundry other signs of serious disarrangement,—therefore we ought to condemn its employment as a *remedy* in ague. "Banquets of barley gruel," to use our author's expression, make a sound man ill; hence they should be carefully excluded from the regimen of fever. If the strict application of his test condemn such universally acknowledged remedies as the preceding, *a fortiori* it must condemn such "frightfully depressing" agents as bleeding, and mercury, and antimony, and low diet. Accordingly, the Doctor is not favourable to aggressive medicine; he is sceptical as to the good effects of bleeding as a means of lessening the force of the circulation; he repudiates the medical creed which puts mercury forward as a successful instrument in "bridling adhesive inflammation;" he denounces large doses of antimony in pneumonia, and argues that the very physician who systematically administers them would arraign as guilty of murder any man who would give like doses to his *healthy* wife. It is plain, therefore, that if the author's test be admitted, combative medicine, and all things thereto appertaining, must be condemned, and "la medicine c'est paix" must become our professional belief. When such a consummation is accomplished, the author expects that—

"It will show the world that there exists in medicine a fundamental principle, by undeviating attention to which, our science may surely attain that general position and esteem, which, though it has always claimed, it has never yet enjoyed."

From the preceding quotations the reader may gather what the author advocates as being the correct principle of treatment. It comes in effect to this,—that as long as the inflammatory stage of any disease continues, we are to stand by, and let nature fight it out with the ailment, occasionally giving her a pat of encouragement on the back when she gets a fall, but under no circumstances interfering by active assistance.

"When fever is present, the mildest medicines are the best, as the condition is a natural one essential to the complaint, and having, in previously healthy persons, a constant tendency to abate after a definite period; under no circumstances should means be used to cure this fever, which would of themselves suffice to make a healthy man seriously ill."

In this paragraph we have two things taken for granted: one, that inflammatory affections, if let alone, have a *constant* tendency in healthy persons to subside of themselves; the other, that the aphorism, "principiis obsta," however useful it may be in moral diseases, does not hold equally good in physical ones. The author does not tell us in what proportion a damaged organ would be the result of this "expectant treatment," in which, while the physician relinquishes all active interference, hope still so largely predominates in his mind.

Our limited space precludes us from entering any further into this subject; but, in concluding our notice of the work before us, we consider that the principle on which he bases his foundation for a new theory and practice of medicine is not tenable, inasmuch as it takes a one-sided view of the nature of disease. He makes a diminution of vital force, the chief characteristic of disease, but whether as cause or effect does not clearly appear, and he ignores alterations of structure as nonfundamental. But to constitute disease, properly so called, both must co-exist. Depression of vital energy is not necessarily disease; the vis vitæ is temporarily depressed by grief, fasting, fatigue, and like causes, without the occurrence of disease. Besides, depression of vital energy does not usually occur in the early stages of inflammatory diseases; when reaction sets in, the organ becomes over excited and unduly stimulated to resistance.

The phenomena of this state, however, Dr. Inman maintains, are not due to excess, but to deficiency of power, and hence should not be lowered by the antiphlogistic treatment, but raised by the opposite. He also takes for granted that life is a species of *force*, a term peculiarly objectionable when applied to living bodies, as it implies necessity. This force he considers

more or less allied to electricity, but he fails to show the dynamical laws which govern it, analogous to those which govern unorganized matter. He has certainly enunciated certain theorems about this vital force, but we do not see how they enlarge our knowledge beyond what is already known, either of its nature, which is inscrutable, or of its effects, the only means by which we can examine its mysterious connexion with body.

In conclusion, we wish to say that, while we have felt it our duty to express our opinions, such as they are, freely and frankly upon the present work, it would be doing Dr. Inman injustice, did we not also bear our testimony to the zeal which he shows for the advancement of the science of medicine, and for the large amount of medical knowledge which appears in his book. No man can read it without deriving information on many subjects, and without recognising in the author a man of reflecting mind. We are far from wishing to decry any well-intended attempts to improve our art, even when, as we believe is the case at present, they take a wrong direction. The discussion does good. It was the scepticism of Hume which produced the works of Kant and Reid. Methodical doubt often leads to rational certainty.

Exposition of a Method of preserving Vaccine Lymph fluid and active; with Hints for the more efficient Performance of Public Vaccination. By William Husband, M. D., Fellow of the Royal College of Surgeons, Edinburgh; and one of the Medical Officers of the Royal Public Dispensary and Vaccine Institution, Edinburgh, &c. London: Churchill. 1859. Pamphlet, pp. 45.

That Government must do something to prevent the spread of small-pox amongst us, was, and still is, the idea most prominent in the minds of those connected directly or indirectly with our profession, who, to use a nautical expression, keep their weather-eye open, and before whose vision are continually floating any little berths likely to be established in the future. Hence the necessity arose, latterly, to bestir themselves for the good of mankind, and to exhibit their great erudition and practical knowledge on the subject of vaccination, together with the best method of carrying out a perfect system. And so various means have been adopted for this purpose,—pamphlets, published papers read at such and such society, and letters to Mr. Editors of every species of periodical—physicians, surgeons, apothecaries, poor-law guardians,

and quacks; all have had their fingers in the pie. The fact of the majority of these having been, from circumstances over which they had no control, absolutely incompetent to offer an opinion on the subject, was to them of no importance: could they but succeed in leading the public to believe the contrary, their point was gained. Nothing, however, has yet been done by Government to improve the condition of vaccine affairs; subjects deemed of more importance than matters relating to our health now occupy the time of Parliament, and are likely to engage it till the termination of this session. Thus aspirants for vaccine fame have still further opportunity of publishing their interesting views, on a matter of which as a general rule, they are completely ignorant.

Now having been, for many months back, kept in a constant state of nausea by the trash emanating from the pens of these pseudo-philanthropists, it is refreshing to obtain some really useful information on the vaccine question, from an individual whose opinions thereon are entitled to attention, from the fact of his long connexion with a vaccine institution.

Dr. Husband has favoured us, in the pamphlet now under consideration, with hints for the more efficient performance of vaccination, and a description of a method for preserving vaccine lymph *fluid* and active. He begins by mentioning one of the chief obstacles in the way of the successful performance and general diffusion of vaccination, as being the difficulty of keeping "vaccine lymph fresh and active for *any* (*sic*) length of time."

He quotes Dr. Gregory, though why, we are really at a loss to say, who, in his article, "Vaccination," in the Cyclopædia of Practical Medicine, to prove the peculiar liability of lymph to undergo "spontaneous decomposition," gives us the following not very lucid explanation—viz., that this occurs because of its "*being a fluid of extreme delicacy.*" However, one thing we know for certain, whatever the reason may be, viz., that old lymph is never so certain in the propagation of vaccinia as new; and that this has been exemplified by the results of attempts at vaccination from dry points, glasses, &c., transmitted to foreign countries, or kept for a considerable period, even though with the greatest care. In the same ratio as it was difficult to transmit vaccine lymph in an active state to distant regions, so was vaccination retarded in those countries from the impossibility of maintaining a sufficient supply for propagation. Surely, then, any individual who has discovered a means whereby this great difficulty can be overcome, deserves well of humanity. A simple invention, such as Dr. Husband offers for

our use, is worth all the flourishes emanating from the pens of the host of utilitarians who scribble for notoriety.

There have been various modes of storing and transmitting vaccine lymph. The most familiar methods in this country have been, for many years, either between two small squares of glass, having a paper washer surrounding the lymph between them, and the whole secured from external influences by means of tinfoil; or, secondly, upon small ivory points, which, having been tipped with vaccine, were allowed to dry, and then enveloped in some waterproof covering. For almost immediate use, or provided many weeks were not permitted to elapse before they were used, these methods answered very well; but, after the lapse of any considerable period, there can be no doubt but that the vaccinator did not feel very certain as to the result after using them. Small bottles, with glass stoppers terminating in tongues of various shapes, were also found inefficient as reservoirs for lymph. The idea then arose, that if the lymph could be introduced into a glass tube, and hermetically sealed after the air contained in the tubes had been expelled, the desideratum would be obtained.

Therefore, so early as 1823, the French Royal Academy of Medicine recommended tubes, the invention of M. Bretonneau, of Tours, which had been used and recommended previously, by the "Comité Central de Vaccine," and which were described as follows:—"Longs de huit à dix lignes, légèrement renflés dans le milieu et terminés par deux extrémités infiniment déliées."

"But," says Dr. Husband, "no one can read the French accounts of charging, sealing, and using them without perceiving that the whole process is beset with difficulties to such a degree that it is a matter neither of surprise nor regret that the method should have eventually proved a complete failure, and M. Bousquet (the highest authority on the subject) should have at length pronounced against it, and in favour of the squares of glass, as simpler and more effectual."

Another description of tube was produced in 1803 by Mr. Giraud, of Feversham, and is thus spoken of by Dr. Gregory in the Cyclopædia of Practical Medicine:—"Vaccine lymph may be kept fluid in small capillary tubes, having a bulb at one end (in shape like a thermometer). They admit of being hermetically sealed." Our author informs us that, in all probability, it was to these tubes he referred when, in 1833, in his evidence before a Committee of the House of Commons, Dr. Gregory replied to the question, "What is your mode of transmitting lymph to foreign parts?" as follows:—"We have

transmitted lymph to foreign parts in tubes hermetically sealed; but it was so long and troublesome a process that we have not practised it ourselves. We have, however, permitted others to arm their tubes at our establishment," viz., the Small-pox and Vaccination Hospital. We are also informed that the bulbed tube formerly used in Edinburgh "was from two and a half to three inches long, and the diameter of the bulb from one-third to half an inch. Their strength and thickness varied a good deal, but required to be considerable, as their form rendered them peculiarly liable to be broken."

The description of the mode of charging these Edinburgh tubes at once shows that they were anything but convenient, and that the process itself was uncertain:—

"The bulb having been heated in warm water, or over the flame of a candle, the orifice was applied to the exuding lymph, which entered as the heated air cooled; and when enough was taken, and had passed on towards the centre of the canal, leaving a vacant space behind it, the orifice was sealed hermetically, *as far as was practicable*, I should add; for the glass was often so thick that an ordinary flame was not strong enough to melt it."

The objections to this form of tube might be summed up as follows:—The bulbs not being exactly of the same size, some inconvenience was necessary in applying the proper degree of heat; and then—

"In proceeding to seal them, it was difficult to seize the moment when the charge had advanced a certain way along the tube, and before it approached the bulb, into which it was apt to pass suddenly, and be lost. . . . . The impossibility of sealing them expeditiously, together with the precautions necessary to be observed in order to convey them unbroken from place to place (for they required careful packing in cotton, whether empty or charged), with other difficulties which I need not specify, were found to be insurmountable objections to their use, greatly counterbalancing the one advantage which they possessed, of preserving the lymph fluid."

The desideratum then was, to invent some form of glass tube which would admit of being easily and quickly charged with lymph, and hermetically sealed, and which would admit of being transmitted in safety from place to place. The history of the origin of the one invented by Dr. Husband is as follows:—

"In 1846 I had been making experiments with the old methods, in the hope of finding out some effectual means of keeping up a supply of vaccine matter for my own use. Having failed with the

squares of glass, I procured some of the thermometer-shaped tubes, which were then used at the New Town Dispensary and elsewhere for the purpose of sending lymph to distant parts; and it occurred to me to get rid of the terminal bulb, and to diminish the caliber and thickness of the wall of the stem. The result was a true capillary tube about three inches long, cylindrical, open at both ends, and admitting of being charged and sealed with ease and expedition. This was in the spring or summer of 1847. From that day to this I have used the tubes, to the exclusion of every other method, and have found the practice of vaccination facilitated in consequence, to a degree of which I could previously have formed no conception."

Taking the mean of several, Dr. Husband gives the following as the average measurement of the tube:—

"Length, $2\frac{3}{4}$ to 3 inches.
Diameter, $\frac{1}{25}$ of an inch.
Thickness of wall, $\frac{1}{200}$ of an inch."

The advantages possessed by this form of tube over all other for the preservation of lymph may be thus summed up:—Their tenuity is such that they can be sealed instantaneously at the flame of a common candle; they are of sufficient size to contain more than enough lymph for one vaccination; they are of such length that both ends can be sealed without subjecting the lymph to the heat of the flame; and lastly, they bear handling without breaking. Notwithstanding these great advantages, however, the tube would not be available for the purpose intended, were it not capable of being readily filled with lymph, and subsequently transmitted with safety through the post-office.

To test it for these necessary requirements, we have had some of the empty tubes transmitted to us by post from Edinburgh, and have also followed the author's directions for filling and sealing them. One hundred empty tubes have been safely forwarded to us in a trough, formed in a small piece of soft deal by means of a gouge, which was covered by a thin lid of similar material, battened down with minute pins. The tubes arrived in perfect safety; not one was broken, though stamped three or four times. So far, we were perfectly satisfied; but when we came to fill them, we were delighted with the rapidity and facility with which they could be charged and sealed. We cannot do better than give the author's directions for filling and sealing in his own words:—

"The vesicles having been opened with a lancet in the usual way [we presume he means punctured], the tube, held in a position more or less inclined to the horizontal, is charged by applying

one end of it (the straight end, if they be not both straight; not that which tapers to a point) to the exuding lymph, which enters immediately by the force of capillary attraction. As much lymph is allowed to enter as will occupy from about one-seventh to one-half the length of the tube, according as its capacity is greater or less. As a general rule, each tube should not be charged with more than will suffice for one vaccination."

The following are the directions for sealing:—

"Either, *first*, make the lymph gravitate towards the middle, by holding the tube vertically, and, if necessary, giving it a few slight shocks, by striking the wrist on the arm or table. Then seal the end by which the lymph entered, by applying it to the surface of the flame of the candle. It melts over, and is sealed immediately. Proceed with the other end in the same way, but first plunge it suddenly—say half an inch—into the flame, and as quickly withdraw it, till it touches the surface as before, and hold it there till it, too, melts over. If it be applied to the surface of the flame without being first plunged into it, it melts, no doubt, and gets sealed; but before you have time to complete the process, and while the glass is still soft, the heated air within expands, and forms a minute bulb, which, from its tenuity, either gives way on the instant, rendering it necessary for you to break off the end, and begin anew; or, what is worse, remains entire for the time, only to break afterwards by the slightest touch."

Though these directions for filling and sealing take considerable time to describe, yet we can assure the reader, from experience, they are practically accomplished in a moment.

To vaccinate from the tube is equally simple. The ends are broken off, and the lymph is blown upon the lancet. This we have also tried. Having first made our little incisions, we have blown the lymph upon the flat of the point of the lancet, and have then infected the wounds. The tubes, both charged and uncharged, can also be safely carried about the person without risk of fracture, viz., in a small glass tube "somewhat thicker than a test-tube," with a stopper or cork to retain them. We have safely carried them in a common test-tube. The source of the lymph can be noted by passing the charged tube through two slits in a thin piece of paper, with the date on which it was charged, and the history of the vesicle from which it was taken, noted thereon. But, in addition to all these great desiderata, and what renders this tube a real treasure to the vaccinator, it has been found by Dr. Husband (and, though we have not yet had time to test it for our own satisfaction, we have every confidence in the truth of his assertion) that the lymph keeps fluid and effective for an indefinite period when

properly stored in it. Thus, in the month of August last, the author showed Mr. Ceely

"Several perfectly successful vaccinations with lymph which had been sealed up for five, six, and seven years. Mr. Ceely saw, in one case, a cicatrix, from which the crust had just dropped, of a vesicle produced by lymph, dated April 17, 1852; that is, seven years and three months old."

Further, in these tubes the lymph appears to be free from the influence of a high temperature; for we find our author gives a summary of 341 vaccinations with lymph, which, for experiment sake, had been exposed during several hours daily, *for months together*, to a temperature of from 80° to 90° Fahrenheit, the result being 300 successful cases and 41 failures. These cases are from his own practice, not from that of others; and the results have been recorded by himself. Thus, practitioners in the tropics will not be liable to so many disappointments in vaccination as heretofore, should they make use of Dr. Husband's tube.

The profession and public are under an obligation to Dr. Husband for this simple invention, which will, doubtless, do much to facilitate the spread of vaccination. The practitioner can now store up his lymph in such a manner, that he can at any moment, as, for example, should an outbreak of small-pox occur, at once procure a charge on which he can rely, and thus lose no valuable time in sending to a vaccine establishment for fresh lymph. So that these establishments shall then become what they were originally intended to be, namely, a fountain-head from which to renew *occasionally*, and not as they are now made by many, a mere convenience for carelessness and inactivity.

Were medical practitioners connected with the public service to give more attention to the storing of lymph, and their governing bodies to afford them facilities for maintaining their supply, we should not read such passages as the following one, extracted from the Report of the Vaccine Board to Parliament, fer the year 1857-58, when they conclude with the fear lest, under the present arrangement for carrying out the provisions of the compulsory Vaccination Act, "The supply should be so far diminished as that the Board might be unable to meet the applications which are made to it. Hitherto, through the increased exertions of the vaccinators, such has not been the case, but it appears probable that it may hereafter be necessary to obtain such additional powers as would secure a supply equal to the continually increasing demand." The drain at

the vaccine institutions, we understand, is enormous. Surely such need not be the case, to take Ireland for instance, common attention on the part of the dispensary practitioners, backed by the simple sanction of the Poor Law Commissioners to the adoption of the deposit system, would render a scarcity of lymph impossible, and would do more to further vaccination in this country than any ill-regulated compulsory act. These tubes of Dr. Husband will be found by our dispensary practitioners invaluable, and would, in conjunction with the hint above thrown out, go far towards the annihilation of small-pox amongst us.

To the perusal of our brother practitioners we strongly recommend this brochure of our author, and we are convinced they will agree with us, that it is one of serious interest, and a most valuable contribution on the subject of vaccination.

The Anatomy of the Human Lung: an Essay for which was awarded the Fothergillian Gold Medal of the Medical Society of London. By A. T. HOUGHTON WATERS, M. R. C. P. L. London: Churchill. 1860. 8vo, pp. 233.

THIS Essay has come before the profession with a high stamp of approbation, in that it has been awarded the Fothergillian gold medal; and most cheerfully do we endorse the judgment thus passed on it as being a very complete and valuable exposition of the anatomy of the human lung. To the teachers of anatomy it will be of great use, giving so clear a description as it does of a subject hitherto involved in obscurity, an obscurity to which the multiplicity of words has not a little contributed. It is well illustrated by woodcuts, many of them original; and the descriptions of the air-cells and terminations of the bronchial tubes are founded on original investigations, which prove the author to be an accomplished anatomist. The terms of the competition seem to have deterred Dr. Waters from venturing on any application of his anatomical observations to physiology or pathology, which will, we have no doubt, be a source of regret to many of his readers; but to those who wish for a good, clear, and purely anatomical account of the structure of the lungs, we can cordially recommend this Essay.

The Nature and Treatment of Gout and Rheumatic Gout. By Alfred Baring Garrod, M. D., F. R. S., &c. London: Walton and Maberly. 1859. Fcap. 8vo, pp. 601.

Here is a book such as it does one good to meet with,—that advances our science, improves our art, reflects honour on our profession, and proves its author to be worthy to take place among the great masters, who, having observed nature, and followed the course that she indicates, have produced works that have lived for ever. Dr. Garrod has placed on his title-page, as his motto, the following quotation from Rousseau:—

> "Observez la nature, et suivez
> la route qu'elle vous trace."

And most truly has he acted up to it, and so succeeded, in a true Baconian spirit, in unravelling the pathology of gout. Let us sit down and study this great master-piece.

The book is divided into fifteen chapters, to which an appendix is added. In the first chapter we have, first, a sketch of the knowledge of ancient writers on the subject of gout; then an account of the classifications of modern writers, especially Cullen and Mason Good; and then a division into the two forms of regular (acute and chronic) and irregular gout is proposed.

"As forced attempts at subdivision and refinement tend rather to complicate than render clear to the mind the various phases which a disease is capable of exhibiting, I shall endeavour in the present treatise to simplify as much as possible; and for this purpose I consider that the phenomena of gout may, for all practical purposes, be grouped under the heads of, 1st, regular gout (acute or chronic), consisting, for the most part, of a peculiar inflammation of the structures within and around one or more joints; and, 2nd, irregular gout, which may be manifested either in severe functional disturbance of any organ, or in the development of inflammation in parts other than those connected with the joints. The last variety would therefore include the various forms classed by different writers under the heads of atonic, misplaced, retrocedent, lurking, abarticular gout, &c. Many diseases which have been classed under these denominations have no claim to be considered as truly gouty in character, being frequently but the secondary effects arising from alterations in organs, produced either by gout itself, or by the causes which have given rise to this disease.

"Some objection may perhaps be made to the use of the terms regular and irregular gout, and it may be asserted, and perhaps with truth, that its so-called irregular manifestations are in fact quite as regular as the articular affection; however, the terms are

convenient, and the meaning to be attached to them has been sufficiently explained."

The second and third chapters are devoted to a description of acute and chronic gout, and, though excellent in themselves, it is not necessary for us to notice them at any length. The œdema and subsequent desquamation of the cuticle in acute attacks are regarded by our author as of considerable diagnostic importance:—

"As a rule (he says), true rheumatic inflammation is not accompanied by œdema. Now and then, however, it does occur in undoubted cases of genuine acute disease; but it is then more general in character, affecting the whole limb, and so not strictly confined to the inflamed part, as occurs in cases of uncomplicated gout."

In some instances, acute gout attacks many joints simultaneously, including some of the larger ones, when there is great difficulty in distinguishing the case from acute rheumatism. In a case of this kind, at first regarded as rheumatism, Dr. Garrod came to the conclusion that it was really gout, in consequence of the occurrence of the œdema, preceded by a tense, shining appearance of the skin—a conclusion confirmed by the progress of the case, as well as by the discovery of uric acid in the blood.

Chronic gout seldom continues long in one locality without producing partial or complete anchylosis, or the formation of the so-called chalk-stones around the articulations or in other parts of the body. These so-called chalk-stones, which are really deposits of the urate of soda, have been found by the author more frequently in the ear than in any other place—a circumstance deserving of attention, as it may prove of considerable service in the diagnosis of doubtful cases. Their consistence varies considerably. Sometimes they are quite soft to the touch; at others, almost as hard as chalk itself. On the ear they appear, at first, as a little white spot, which, when punctured, gives exit to a semi-fluid cream-like exudation, which is found by microscopic examination to consist of acicular or needle-like crystals of urate of soda. The frequency of these deposits in the ear the author has found to be greater than preceding writers state:—

"Comparatively few gouty patients become the subjects of visible chalk-stones, at least to any extent, or such as to induce deformity; at the same time I am convinced that their occurrence in a slight degree is by no means so rare as has been generally assumed. Sir C. Scudamore stated that in five hundred cases of gout he only found them forty-five times, or in less than ten per cent. From my

own experience I consider these numbers far below the real proportion, being confident that their existence is frequently overlooked, as they are sometimes deposited in parts of the body scarcely to be expected. In one or two works it is mentioned that small concretions are now and then seen even upon the cartilages of the ears, but no particular notice is taken of the fact. Within the last few years I have specially investigated this point, and find that instead of such deposits being occasionally present on the ear, they are more frequently found there than in any other situation; and that where they are visible upon any other part, they are usually, but not invariably, seen on the ears also.

"In thirty-seven gouty patients who were examined to ascertain the presence or absence of concretions of urate of soda upon the surface, or in such situations as to be undoubtedly recognised, it was noted, that they were present in seventeen cases, absent in twenty; and in the above seventeen, they occurred in the ears alone in seven cases, the ears and around the joints in nine, and in one case only could they be recognised in other parts of the body, without being present in the ears also.

In the ears they vary much both in number and size, sometimes only one exists, at others as many as eight or ten; in size they occasionally equal a split pea, often they are not larger than a pin's head, and now and then even much less, a mere point only. They have the appearance of little pearls, and are generally situated about the fold of the helix; sometimes they possess a gritty hardness, but often are soft, and when punctured give exit to a milky or cream-like fluid. Further examination shows that when hardened they become firmly attached to the cartilage of the ear, and enlarged blood-vessels are often seen in their neighbourhood, and extending some distance from them."

The next chapter (fourth) is on the condition of the blood in gout, and is perhaps the most interesting and important of all. Hitherto there had been nothing positively ascertained as to the alterations undergone by the blood in this disease. Many circumstances had led to a belief in the presence of some morbific matter; but, so far from its nature being ascertained, its actual presence had not been demonstrated. Dr. Garrod has now accomplished this, and proved, we think, beyond controversy, that it is uric acid. The chapter opens with a description of the normal state of the blood; and it is shown that the globules, fibrin, and serum undergo no essential change, though the fibrin may be increased in quantity, as in other inflammatory affections, or where there has been defective nutrition or well-marked kidney affections, the serum may be of lighter specific gravity. On examination, however, the serum is found to contain an abnormal quantity of uric acid. This was first discovered by Dr. Garrod so long ago as 1847, in an examina-

tion of the blood of a patient, aged 41, who for three years had suffered from repeated fits of gout. The observations were soon repeated on several cases, with uniform results, and published in the "Transactions of the Medico-Chirurgical Society" for 1848; and the conclusion was at that time drawn, that "the blood in gout always contains uric acid, in the form of urate of soda, which salt can be obtained from it in a crystalline state." From that time up to the present, Dr. Garrod has been in the habit of examining the blood in this disease, when opportunity presented itself, amounting now at least to one hundred cases; and the only alteration he would be disposed to make in the above statement would be, to append the words, "in abnormal quantities," as he has found that in health the merest traces both of uric acid and of urea can usually be detected by very great care in manipulation. The process used at first for determining the presence of uric acid requires considerable time and care; and, however suitable for pathological investigation, is too tedious and complicated to be used in clinical examinations. The author has, however, devised another method, which he has used clinically for the last eight years, and with the results obtained from which he has every reason to be well satisfied. It is likewise a process which can be readily employed by every medical practitioner, and which has the advantage of requiring the abstraction of only a very small quantity of blood. He has named the process, "The Uric Acid Thread Experiment," and it is thus performed:—

"Take from one to two fluid-drachms of the serum of blood, and put it into a flattened glass dish or capsule; those I prefer are about three inches in diameter, and one third of an inch in depth, which can be readily procured at any glass-house; to this add ordinary strong acetic acid, in the proportion of six minims to each fluid drachm of serum, which usually causes the evolution of a few bubbles of gas. When the fluids are well mixed, introduce a very fine thread, consisting of from one to three ultimate fibres, about an inch in length, from a piece of unwashed huckaback or other linen fabric, which should be depressed by means of a small rod, as a probe or point of a pencil. The glass should then be put aside in a moderately warm place, until the serum is quite set and almost dry; the mantel-piece in a room of the ordinary temperature, or a book-case, answers very well, the time varying from twenty-four to forty-eight hours, depending on the warmth and dryness of the atmosphere.

"Should uric acid be present in the serum in quantities above a certain small amount noticed below, it will crystallise, and during its crystallisation will be attracted to the thread, and assume forms not unlike that presented by sugar-candy upon a string, when in

the dark field under polarised light it has an appearance represented in the woodcut, fig. 10. To observe this, the glass containing the dried serum should be placed under a linear magnifying power of about fifty or sixty, procured with an inch object-glass and low eye-piece, or a single lens of one-sixth of an inch focus answers perfectly. The uric acid is found in the form of rhombs, the size of the crystals varying with the rapidity with which the drying of the serum has been effected and the quantity of uric acid in the blood. To insure perfect success, several precautions are necessary.

"1. The glasses should be broad and flat; watch-glasses of the ordinary kind are not suitable, being too small, allowing the fluid to be frequently spilt, and also too much curved, causing the film of partially dried serum to curl up and split.

"2. The acetic acid should be neither very strong nor weak. The glacial acid often forms a gelatinous compound with the albumen of the serum, producing flakes; and very weak acid adds unnecessarily to the bulk of the fluid. By experience I find the ordinary strong acetic acid (about $\frac{30}{100}$) well suited for the experiment.

"3. The character of thread and its quality are of some moment. Very smooth substances, as hairs or fine wire, but imperfectly attract the crystals; if the number or length of the fibres be too great, and the amount of uric acid small, the crystals become much scattered, and therefore but few appear in the field of the microscope. The glass should not be disturbed during the drying of the serum, or the crystals may become detached from the thread.

"4. Some attention to temperature is necessary; if the serum be evaporated at a high temporature, above 75° Fahrenheit for example, the drying may take place too rapidly to allow crystallisation; the temperature of an ordinary sitting-room answers well for the purpose; it should be protected from dust.

"5. If the serum be allowed to dry too much before the examination takes place, the surface becomes covered with a white efflorescence, consisting of feathery phosphates, which may obscure the thread, and which are represented in Plate vi., fig. 4, *c*; they can be removed by the addition of a few drops of water before placing the glass under the microscope; sometimes over-drying causes the film to become cracked or fissured throughout, as well as covered with the phosphatic efflorescence.

"6. It is well, when practicable, to put up two or more glasses with the same serum.

"7. The blood should be recently drawn, or at least no change or decomposition should be allowed to take place in it before the experiment is made, for uric acid when in contact with animal principles is liable to undergo decomposition, as we shall subsequently have occasion to show."

This process is not a very delicate one; but for clinical pur-

poses this is in itself a great advantage, for it is necessary that the uric acid should be present in abnormal quantities for its presence to be indicated by the thread experiment. From a series of well devised experiments to ascertain the lowest amount of uric acid indicated by the process, Dr. Garrod forms the following conclusion :—

"From this it appears, that an amount of uric acid equal to at least 0·025 grain in the 1000 grains of serum, in addition to the trace existing in health, is required before the 'thread experiment' gives indication of its presence, and hence the appearance of uric acid on the thread is complete evidence of an abnormal or morbid quantity in the blood. In several experiments on the blood in gout and albuminuria, where quantitative determinations were made, the amount of uric acid in the 1000 grains of serum was found to vary from 0·045 to 0·175 grain."

Another circumstance of importance is that the experiment should be tried with perfectly fresh serum, as in the process of decomposition the uric acid is converted into oxalic acid, which itself disappears as the decomposition progresses. Having thus explained the method of examination, the author gives, in a tabular form, the details of forty-seven examinations of the blood, and the symptoms and particulars of each case, which abundantly prove the statement, "that the blood in gout is rich in uric acid."

It appears, moreover, that the serum obtained by blisters will also afford uric acid with the thread experiment, so that this method of obtaining serum may be resorted to in cases where, for purposes of diagnosis, an examination is desirable, but where venesection cannot well be employed. The blistering agent must not be applied, it appears, to an inflamed surface ; for the existence of inflammation, at least of a gouty character, has the power of destroying the uric acid in the blood of the part, and hence prevents its appearance in the serum. The slight inflammation, however, produced by a blister applied elsewhere does not destroy the uric acid. This power of gouty inflammation to destroy uric acid is, as the author observes, a fact of great interest :—

"Should further inquiry confirm the conclusion to which the above limited number of observations point, namely, that during the existence of gouty inflammation there is a destruction of the uric acid in the blood of the locality, and other independent researches which I have made appear to favour this idea, it will throw no small light on the pathology of gout, and show the reason of the apparent improvement in the health which frequently follows a severe and prolonged fit of the malady."

Urea is also often found in abnormal quantities in the blood of gouty patients, but whether it is so in very early attacks where uric acid exists, has yet to be determined. The cases in which it has been found in greatest quantity are those in which there is more or less evidence of disorganization of the kidneys. Oxalic acid, too, is sometimes met with. Dr. Garrod is under the impression that it chiefly occurs in the inflammatory stage of the disease, when it may result from the oxidation of the uric acid.

Chapter fifth is devoted to the consideration of the condition of the urine in gout, and, as in the preceding chapter, the normal state of this fluid is first described. A tabular statement of the results obtained by Becquerel is given as a standard, but the author at once rejects this standard, for whereas Becquerel states the normal daily excretion of urea to be 255·5 grains, Dr. Garrod takes as his average 450 grains, an average, probably, nearer the truth; but if we are to adopt the conclusions arrived at by Mr. Haughton, in his able paper recently published in our pages still short of the real amount, passed by well-fed men, by 126 grains.

The normal daily excretion of uric acid, Dr. Garrod follows Becquerel in stating to be about eight grains; our readers will remember that Mr. Haughton expresses his belief that in the urine of a perfectly healthy man there should be no uric acid, but that in his experiments he found that well fed men excreted about 4·55 grains daily. We believe that Mr. Haughton's experiments were too few in number to afford a reliable basis for generalization, and that they even invalidated his own conclusion; but this uncertainty as to the normal constituents of the urine takes away from the value of investigations such as the present. As Dr. Garrod's investigations were, however, made by himself, and after a uniform method, the results may be sufficiently true for comparison, though there may be a doubt as to their absolute truth. He has divided his analyses into three classes, the first being of the urine of subjects suffering from acute gout, but in whom the general health had usually been good during the intervals of the paroxysms. Of this class he says:—

"My present experience on the subject shows, that in the earlier stages of acute gout the urine is scanty, and the uric acid, measured by the twenty-four hours' excretion, also diminished; that this acid is thrown out in much larger quantities as the disease is passing off, and that then amounts, even far above the patient's daily average, may be excreted, frequently forming the so-called

critical discharges; lastly, the uric acid is again lessened, although not to the extent observed prior to, or at the commencement of an attack."

The second class consists of cases in which the patients suffered from chronic gout, but were free at the time from urgent symptoms, though suffering from the sequelæ, as gout stones, &c. Of this class of cases he says:—

"It is usually rather pale, below the average tint of healthy urine, of lower density, and often increased in quantity.

"The amount of urea, except in extreme cases, about the same as in health (due regard being taken of the diet of the patient at the time).

"The uric acid very much diminished, and subject to excretion in very varied quantities at different times. Lastly, the presence of a small amount of albumen is exceedingly frequent."

The third class consists of cases where the patients had repeated attacks of acute gout, but at the time of examination were completely free; of these cases, which were only six in number, he says:—

"It will be seen from the above analyses that in no one of the six patients did the amount of uric acid excreted in the twenty-four hours exceed the healthy average; in the majority it was far below. From these and other less complete examinations, I am inclined to think that in individuals who have suffered frequently from gout, even though no visible deformity of the joints or deposits may have resulted therefrom, the kidneys lose to some extent their power of excreting uric acid; and moreover, I am convinced from the results of many trials, that the blood is often kept impure from its presence. This is probably one cause of the extreme liability of such patients to periodic visitations of the malady, and also of the great difficulty in effecting its radical cure.

"It is likewise interesting to observe that in these individuals, as well as in those suffering from acute or chronic gout, the urea-eliminating function of the kidneys remains comparatively intact."

In all these classes the excretion of uric acid is found to be below the average; Dr. Garrod considers the question, does this arise from the non-formation of it in the system, or from the deficient elimination of it in the kidneys, and as he found it in excess in the blood, he concludes it arises from the kidney being deficient in the power of elimination.

The following two chapters describe the morbid anatomy of gout, and in them it is shown that in all cases of gout, even in simple attacks, there is a deposition of urate of soda, and this

Dr. Garrod considers to be the cause of the gouty inflammation. These chapters, and the succeeding one, on the causes of gout, are of great interest and importance, but we cannot dwell on them as we would wish.

The ninth chapter is on the pathology and treatment of gout, for the consideration of which the preceding chapters form a good preparation. It opens appropriately with a discussion on the physiology of uric acid, the close connexion between this substance and gout having already been demonstrated. We have next an examination of the views of preceding writers as to the pathology of the disease, and then the views arrived at by the author himself. These are summed up in the following propositions, which arise directly from the groundwork that has been laid down in the previous chapters. For the illustration of these propositions, and the application of them to explain the several phenomena of gout, we must refer our readers to the volume itself:—

"First, in true gout uric acid is invariably present in the blood in abnormal quantities, in the form of urate of soda, both prior to and at the period of the seizure, and is essential to its production; but it can be equally proved that this acid may occasionally exist largely in the circulating fluid without the development of inflammatory symptoms, as, for example, in cases of lead poisoning, and a few other instances. Its mere presence, therefore, does not explain the occurrence of the gouty paroxysm.

"Secondly, the investigations recently made in the morbid anatomy of gout, prove incontestably that true gouty inflammation is *always* accompanied with a deposition of urate of soda in the inflamed part.

"Thirdly, the deposit is crystalline and interstitial, and when once the cartilages and ligamentous structures become infiltrated, such deposition remains for a lengthened time, perhaps during life.

"Fourthly, the deposited urate of soda may be looked upon as the cause, and not the effect, of the gouty inflammation.

"Fifthly, the inflammation of gout tends to the destruction of the urate of soda in the blood of the part, and consequently of the system generally.

"Sixthly, the kidneys are implicated in gout, probably in its early, and certainly in its chronic forms; and this affection is not only functional, but subsequently becomes structural; the urinary secretion is also altered in composition.

"Seventhly, an impure state of the blood, arising principally from the presence of urate of soda, is the probable cause of the disturbances which not unfrequently precede the seizure, and of many of the anomalous symptoms to which gouty subjects are liable.

"Eighthly, the causes which predispose to gout, independently

of those connected with individual peculiarity, are either such as produce an increased formation of uric acid in the system, or which lead to its retention in the blood.

"Ninthly, the causes exciting a gouty fit are those which induce a less alkaline condition of the blood, or which greatly augment the formation of uric acid, or such as temporarily check the power of the kidneys for eliminating this principle."

Chapter tenth is on the treatment of gout. The method occasionally recommended, and founded on Cullen's aphorism of trusting to patience and flannel alone in the treatment of gout, is one which must, Dr. Garrod says, be highly deprecated. On the contrary, he regards the acute fit as quite as controllable, and as much under the influence of remedies, as any other inflammatory affection. The chronic forms, too, he regards as greatly within the power of the physician,—if not for their radical cure, still for so much relief as to enable the patient again to enjoy life, and prevent further increase of mischief, so prone to ensue if the disorder be left to run its own course, and especially if recklessly tampered with. And in the intervals of the attacks, our author believes it is a matter of serious moment to not only regulate the diet and regimen, but even occasionally to have recourse to some means, scarcely to be called medicinal, by which the blood is kept more free from those impurities which, by their accumulation, lead to the production of the paroxysms.

The method of treatment, and the value of the several remedies, is fully discussed, with the exception of colchicum, which is regarded as of so much importance as to require a separate chapter devoted to itself. The general treatment of an acute attack is summed up as follows:—

"The diet should be very light and chiefly amylaceous, diluents freely used, but no alcoholic stimulants allowed, unless in exceptional cases.

"The medicinal treatment should consist in the administration of some simple alkaline saline, combined with a moderate dose of colchicum. If necessary, purgatives may be given, selected according to the habit and condition of the patient. In the majority of cases, this will be found to be all that is necessary, but in some instances certain modifications may be essential; for example, if there be great plethora, the question of the abstraction of a few ounces of blood may possibly arise; and, on the other hand, if the vital powers are at a low ebb, and great vascular and nervous depression exists, ammonia, in the form of the sesquicarbonate, may be desirable in addition to, or as a substitute for, other salines; at the same time the colchicum should be altogether omitted, or used with the greatest caution.

"The only local application required in the majority of cases is

cotton wool covered lightly with oiled silk, which forms a protection to the joint; but now and then an anodyne may be advantageously used, and a small blister is occasionally of service."

The next chapter is devoted to the consideration of the value and mode of action of colchicum and veratria. Of the value of the former, when judiciously administered in acute and chronic gout, there can be no question; and even in the intervals "there is," says the author, "some evidence and considerable authority for regarding the use of colchicum as valuable in warding off an attack." The mode of its action is not, however, so easily discovered as its value. Dr. Garrod details many investigations on this subject, the results of which are merely negative. It does not, he shows, produce its beneficial action by its cathartic properties, nor by its sedative effect on the heart and circulation, nor by increasing the excretion of uric acid; but possibly it may, he says, have a direct sedative effect on the special tissues engaged in the disease, in the same way that certain sedatives affect the heart, while others act on the remote capillaries.

Those who have been in the habit of continuing the use of colchicum for a considerable period after the disappearance of the paroxysm of gout, as so strongly recommended by Sir Henry Holland, with a view to lengthening the intervals or warding off future attacks, will scarcely believe that its action is merely sedative. Dr. Garrod alludes to a statement of Dr. Graves, that the power of colchicum is due to its lessening the formation of uric acid in the system, and not to any increased elimination of it by the urine. If this mode of its action could be demonstrated, it would explain the benefit arising from its use during the intervals; but, strange to say, where all else is so complete, Dr. Garrod seems to have made no special examination of the state of the blood during the use of colchicum.

The two succeeding chapters are on the treatment of chronic gout, one of them being devoted to the consideration of the use of mineral waters. Our space precludes us from noticing these chapters; but we must make room for the following extracts, concerning the use of the salts of lithia,—a new remedy brought into use by Dr. Garrod, and which seems likely to be of great service:—

"*Lithia Salts in the Treatment of Gout.*—On looking over the more recent analyses of several mineral waters, it will be observed that lithia is mentioned as occurring in minute traces, and not unfrequently, when no notice is taken of its presence, the omission has probably arisen from the analyst not having sought for it.

"As the use of lithia in medicine is novel, it may be advisable to

say a few words on its nature and properties, more especially as these salts may probably one day become important additions to the list of our materia medica.

"Lithia was first discovered by Arfwedson, in 1817, in the mineral Petalite, and was so named from λιθίος, stone-like. It has been extracted from several other minerals, and has been found in many medicinal springs, as those of Carlsbad, Aix-la-Chapelle, Marienbad, Kissengen, Ems, Teplitz, Bilin, Kreuznach, Vichy, &c.

"The metal lithium, of which lithia is the oxide, is of a beautiful white colour, not unlike silver, readily oxidised by exposure to the air, of a specific gravity much less than that of water, in fact lighter than any known liquid. It is also remarkable from possessing a very low atomic or combining proportion, not exceeding seven on the hydrogen scale.

"Lithia forms the third fixed alkali, and occurs as a white crystalline substance, with a caustic taste, and possessing an intense alkaline reaction, similar to potash or soda. In some of its chemical characters it closely approaches these bases; in others, magnesia and lime. The proto-carbonate differs from the other alkaline carbonates in being little soluble in water, requiring about 100 parts, but when dissolved in even 1000 parts, the solution is alkaline: with excess of carbonic acid it is rendered more soluble.

"The taste of carbonate of lithia closely resembles that of bicarbonate of soda. As the equivalent of lithium is small, it follows that both the alkali and the carbonate possess great neutralizing powers for acids, and in this respect differ from the corresponding preparations of the other fixed alkalies.

"One of the most remarkable properties of lithia is its power of imparting solubility to uric acid, the urate of this base being the most soluble of urates."

"Within the last two years I have made many trials of carbonate of lithia as an internal remedy, both in cases of uric acid diathesis connected with gravel, and likewise in several cases of chronic gout, and, from what I have experienced, am much satisfied with the result. When given internally in doses of from one to four grains dissolved in water, and repeated two or three times a day, it produces no direct physiological symptom, but exerts a marked influence in cases when patients are voiding uric gravel, causing the formation of the deposits to become less or cease altogether. In many instances in which I have administered it to gouty subjects, the result has been to diminish the frequency of the attacks, and altogether improve the condition of the patients. I am of opinion that the salts of lithia offer to the physician most valuable agents in these cases, as their alkalinising property is of the highest order, on account of the smallness of their atomic weight; and their solvent power for uric or urates, far greater than that of any other agent; in addition to which their local influence is slight, and their use does not appear to be attended with any injurious consequences.

"To demonstrate the superior power of carbonate of lithia in

removing the deposits of urate of soda from gouty cartilage, I performed the following experiment: solutions were made of the carbonates of lithia, potash, and soda, in the proportion of one grain of the dry salt to each fluid ounce of distilled water; into these were placed small pieces of cartilage completely infiltrated with urate deposit, which were allowed to remain for forty-eight hours. At the end of that time, the cartilage taken from the lithia solution was found to be restored to a natural condition; that from the potash was much acted upon, but that which had been submitted to the influence of the carbonate of soda appeared unaltered.

"If the experiments be made with other salts of lithia, as the sulphate or chloride, in comparison with the corresponding salts of soda, the powerful influence of the former base will be at once apparent, for when sulphate of lithia in dilute solution comes in contact with urate of soda deposited in ligament or cartilage, double decomposition ensues, sulphate of soda and urate of lithia are formed, and the deposit is rendered soluble.

"In administering the carbonate or any other salt of lithia, I have been guided by the following considerations:

"They should be given freely diluted, either in the form of powder dissolved in a large quantity of water, or, which is preferable, dissolved in aërated water, so as to form *lithia-water* corresponding, except in strength, with the soda or potash-water in general use.

"When a large amount of alkali is desirable, I have usually prescribed the carbonate of lithia with some salt of potash, as the carbonate or citrate, and the combination may advantageously be administered in the aërated state.

"Carbonate of lithia can also be given with phosphate of ammonia in the same form; but it must be recollected that the phosphate, as well as the carbonate of this base, are very sparingly soluble in water. The great bar to the use of salts of lithia in medicine has hitherto been their expense, but in the small doses in which they are required, this need not be a serious objection, and, moreover, they can now be obtained at a much more moderate charge; it is probable that, should the benefit derived from their employment, in gouty cases, gravel and calculus—in which it is of importance to keep uric acid and urates in solution—be equal to what may be reasonably anticipated, the supply of the drug might be greatly increased, and its cost proportionally diminished."

The remaining chapters are on irregular gout, and on rheumatic gout. Like all the rest, they teem with sound and valuable information. But we must bring this extended notice to a close. Already have we given a fuller analysis of this work than we usually do in our reviews; we have done so, with a view to inducing our readers to purchase and study the work for themselves. We trust we have done enough to show that it contains a vast amount of the most valuable information.

We have done our duty in indicating where the information is to be had, and its nature ; let our readers do theirs, and secure it for themselves.

A Practical Treatise on Fractures and Dislocations. By FRANK HASTINGS HAMILTON, M. D., &c. Illustrated with 289 woodcuts. Philadelphia: Blanchard and Lea. 1860. 8vo, pp. 757.

OUR first impression on seeing this book was, that M. Malgaigne's magnificent work on the same subject had left no room for a similar one, at least for some years to come; consequently, our feelings were, if anything, unfavourable to the author; we were rather inclined to look upon it as one of those biddings for practice with which our medical literature is now-a-days so profusely supplied, an offering from that *cacoëthes scribendi* as distasteful to the true lover of his profession as Holloway's advertisement, and in all honour and truth not one whit more respectable, and, certainly, not one half so honest. In the one case the advertising empiric avows his trade, makes no effort to conceal what he really is, struts about in no borrowed plumage; but, in the other, the writer, under the garb of science, prostitutes our literature to his own vile purposes, and, whilst seeming to labour for the general good, really cares but to advertise his own name and calling. Entertaining such views, we repeat, then, that we opened Dr. Hamilton's work in anything but an amiable spirit, and the first few lines that we read in the preface did not prepossess us one whit more favourably, as we found Dr. Hamilton himself acknowledging that, since he saw Malgaigne's work, he looked upon his own as being superfluous, and that, were it not for a desire on his part to record the observations and improvements contributed by his own countrymen to this department of surgery, he should have declined to allow his labours to see the light. A very cursory examination, however, of Dr. Hamilton's Treatise soon satisfied us how unjust were our first impressions, and a still more careful perusal gave us ample reason to congratulate surgical literature that, no matter what the motive was that induced him to persevere, persevere he did, and presented his professional brethren with the work that forms the subject of the present notice.

In a work that professes to treat of dislocations and fractures, we cannot in the present state of our advanced surgical knowledge, expect to find much that is new or unknown in

the pathological department. Desault, Boyer, Dupuytren, Sir Astley Cooper, Colles, Robert Smith, Malgaigne, and the rest of the illustrious band who have made those subjects their special study, have left but little new to describe, as to the exact anatomical relations of these several lesions; what is known, however, on these points, has been placed by Dr. Hamilton before his readers in a clear and lucid manner; disputed points have been temperately considered; conflicting opinions have been weighed with judgment, and the conclusion at which the author arrives on them, what we would expect at the hands of a surgeon well read in his profession, and of ripe experience. It is rather to the practical portion of his work that we would look for novelties, and in so doing we must acknowledge that we have not been disappointed; we have rarely met with any work so complete in this department as the one under consideration.

Dr. Hamilton's work, as our readers might have anticipated, is divided into two parts, in the first of which, consisting of thirty-five chapters, we have the subject of fractures considered; in the second, consisting of twenty-six chapters, that of dislocations. The last of these chapters treats of congenital dislocations. It would be simply impossible, in an article such as the present, to pretend to give even a most imperfect résume of the many and varied subjects treated of in these different chapters; we can only content ourselves with alluding to some of the more salient points in his work, and as to the rest recommend our readers to consult it for themselves, with a promise that they will not be disappointed, or have reason to regret the time so occupied. The first extract that we shall submit to our readers is so full of truth, so pregnant with considerations that ought to guide every surgeon who wishes to practice his profession in a way to win the confidence of his patients, and to remove from the mind of the public the opprobrium under which many of our profession have, from their own manner, but too justly laboured, of being cruel and unfeeling—that we conceive no apology necessary for its insertion here, and we shall err much, unless its perusal impresses our readers, as it did ourselves, with the conviction that the writer was a humane man as well as a skilful surgeon.

"I cannot dismiss this subject without calling attention to the necessity of exercising care and gentleness, as well as skill, in the examination of broken limbs. Nothing, in my opinion, betrays a lack of judgment, as well as of common humanity, on the part of the surgeon, so much as a rude and reckless handling of a limb already pricked and goaded into spasms by the sharp points of a broken

bone. It is not enough to say that such rough manipulation is generally unnecessary; it is positively mischievous, provoking the muscles to more violent contractions; increasing the displacement which already exists, and not unfrequently producing a complete separation of impacted, denticulated, transverse, or partial fractures, which can never afterwards be wholly remedied; augmenting the pain and inflammation, and not unfrequently, I have no doubt, determining the occurrence of suppuration, gangrene, and death.

"In proceeding to establish the diagnosis in any case, the surgeon should sit down quietly and patiently by the sufferer, so as to inspire in him from the first a confidence that he is not to be hurt, at least unnecessarily. He ought then to inquire of him minutely as to all the circumstances immediately relating to the accident, in order that he may determine as nearly as possible its cause, which alone, to the experienced surgeon, often affords presumptive, if not conclusive evidence as to the nature and precise point of the injury. From this, he should proceed to examine the disabled limb; removing the clothes with the utmost care by cutting them away rather than by pulling; and, when completely exposed, he should notice with his eye its position, its contour, the points of abrasion, discoloration, or of swelling; and not until he has exhausted all these sources of information ought the surgeon to resort to the harsher means of touch and manipulation. Nor will his sensations guide him to the point of fracture by any other method so accurately as when, the patient being composed and his muscles at rest, he moves his fingers lightly along the surface of the limb, pressing here and there a little more firmly, according as a trifling indentation or elevation may lead him to suspect this or that to be the point of fracture. If the skin is more than usually tender, a few drops of sweet oil or of fresh lard laid upon its surface, or even moistening the skin with tepid water, will render this examination less painful, whilst it will facilitate the diagnosis, by rendering the tactile sensation somewhat more acute.

"The limb, in case of a supposed fracture of a long bone, may now be measured with a tape line, and compared with the opposite limb, having first marked with a soft pencil or with ink the several points from which the measurements are to be made.

"Finally, if any doubt remains, the limb must be firmly but steadily held while the necessary manipulations are performed, for the purpose of ascertaining the existence of mobility and of crepitus. Mobility is most easily determined by giving to the limb a lateral motion, but, in general, crepitus is most effectually developed by gentle rotation. If the place of fracture is already pretty well declared by the previous examinations, the surgeon should place one finger over the suspected point, during this manipulation, by which means the crepitus will be more certainly recognised.

"I do not often find it necessary to resort to anæsthetics for the purpose of insuring quietude and annihilating pain in making these examinations, since it is seldom that the patient needs to be much

disturbed; but if the examination is not satisfactory, and the diagnosis is important, I do not hesitate to render the patient completely insensible, after which the questions in doubt may be more thoroughly investigated, and perhaps definitively settled.

"It is scarcely necessary to say that the earlier the examination is entered upon, the more readily will the diagnosis be made out; and if, unfortunately, some time has already elapsed before the patient is seen by the surgeon, and much swelling has taken place, the examination is still not to be omitted, and, whatever doubts remain, we must endeavour to remove by repeated examinations made from day to day, until the subsidence of the tumefaction has brought the surfaces of the bone again within the reach of our observation."

In the chapter devoted to the subject of the general treatment of fractures, we have some very useful remarks on the various forms of splints employed. The author evidently seems to have a great leaning to those made from gutta percha, for the employment of which material in the construction of splints, we believe that our profession was first indebted to Dr. Oxley, of Singapore, although Dr. Hamilton seems not to be aware of this fact, as he does not give him the credit of the suggestion, and we are confident, from the estimate we have formed of his literary character, that, had he been aware of his claims, he would have done them full justice. As we are fully satisfied of the full value of gutta percha in this department of surgery, and as we conceive that its employment is attended with many advantages, in consequence of the extemporaneous manner in which, in many an emergency, it can be employed, we shall transcribe here Dr. Hamilton's observations on this subject—

"Within a few years sheets of gutta percha have been brought into the market, varying in thickness from one-sixteenth to one-quarter of an inch. For fractures of the thigh, and for large bones generally, I prefer a thickness of about one-sixth or one-fifth of an inch; but for the fingers or toes it need not be more than one-sixteenth of an inch in thickness. In its natural state, and at the ordinary temperature of the body, it is nearly as hard and as inflexible as bone; but, when immersed in boiling water, it almost immediately softens, and would melt completely unless soon removed. It can therefore be adapted to any surface, however irregular, and its form may be changed as often as may be necessary. It does not harden quite as rapidly as felt, and it possesses, therefore, in this respect an advantage, since it allows the surgeon more time for adjustment; while, on the other hand, it hardens much more rapidly than either starch, paste, or dextrine. Ten or twenty minutes is all the time usually required for gutta percha to acquire that degree of firmness which will prevent it from yielding under the pressure of a bandage.

"To use it skilfully requires some experience, and I have known surgeons to reject it after a single trial; but by those who have acquired the necessary skill it is generally regarded as an invaluable resource.

"When constructing from this material a thigh splint, we should order a very large tin pan, or some open, flat tray, in which we may lay the splint at full length. If the splint is required to be twelve inches long, and six inches wide, we must cut it about sixteen inches long by eight wide, so as to allow for the contraction which always takes place more or less when the hot water is applied. It is then to be laid upon a sheet of cotton cloth of more than twice the width of the splint, in order that the cloth may envelop it completely when it is folded upon it; and the cloth should be enough longer than the splint to enable us to handle and lift it by the two ends without immersing our fingers in the hot water. Beside, if the gum is not thus covered and supported, it will adhere to the vessel, to the fingers, to the surface of the limb, and indeed to whatever else it comes in contact with; it may even fall to pieces, or become very much stretched and distorted by its own weight. The cloth cover will generally adhere to the splint, and may be permitted to remain on it permanently.

"Place the splint, thus covered, in the basin, and pour on the water at or near the temperature of boiling. As soon as it is sufficiently softened, lift it carefully and lay it over the limb, and by its own weight it will adjust itself to the surface, or it may be moulded with the hands, or by pressing it against the limb with the pillow. If it does not harden rapidly enough, this process may be hastened by sponging the outer surface with cold water; and, as soon as it has acquired sufficient firmness to support itself, it may be removed, and immersed in a pail of cold water, or placed under a hydrant; after this it is to be neatly trimmed and dried, when it is ready for use."

"There is scarcely any fracture demanding the use of a splint in which I have not demonstrated its utility, but it is especially valuable, as I shall have occasion to mention again, as an interdental splint in fractures of the jaw, and as a moulding tablet in all fractures occurring in the vicinity of joints.

"Benjamin Welch, of Lakeville, Conn., has contrived a very ingenious application of gutta percha to the purposes of a splint, by veneering a thin plate of the gum with equally thin plates of elastic wood. The veneering is laid upon both sides, and then it is pressed into form in moulds. The elasticity of the wood, together with the plasticity of the gum, enables the surgeon to change its form somewhat at pleasure, by dipping it into hot water.

"Its form cannot, however, be changed to any great extent, and by frequent immersion in hot water the veneering is apt to loosen from the gutta percha. Nevertheless, it is a most excellent splint, and in very many respects it is superior to any of the carved wooden splints which we have ever seen."

But it is in fractures of the lower jaw that gutta percha appears to have given Dr. Hamilton the greatest satisfaction. The following are his directions for its employment in those cases.

"The mode of preparing gutta percha, and of adapting it between the teeth, is as follows:—Dip a couple of pieces of the gum, of a proper size, into boiling water, and when they are sufficiently softened, mould them into wedge-shaped blocks, and, having wrapped each block with a piece of cotton cloth, carry them to their appropriate places between the back teeth; immediately press up each horizontal ramus of the jaw until the mouth is sufficiently closed, and the line of the inferior margin is straight: in this position retain the fragments a few minutes, until the gum has sufficiently hardened. Meantime, it will be practicable, generally, to introduce the fingers into the mouth, and to press the gutta percha laterally on each side towards the teeth, and thus to make its position more secure. When it is sufficiently hardened, remove the splints for the purpose of determining more precisely that they are properly shaped and fitted.

"The superiority of this splint is now at once perceived. If properly made, it is smooth upon the surface, and not, therefore, so liable to irritate the mouth as wood or cork, and it is so moulded to the teeth that it will never become displaced.

"The clasp, applied over the crowns and sides of the teeth, is not intended to act as an interdental splint; but, by its lateral pressure, it is expected to hold the fragments in apposition upon nearly the same principle with the ligature.

"I have employed this method several times myself, and my suggestions have been followed by Stephen Smith, of the Bellevue Hospital, New York, who, after having used the gutta percha in four cases, affirms that nothing can surpass it in efficiency."

In his chapter on delayed and non-union of bones, Dr. Hamilton enumerates the various causes of this most unfortunate complication, and mentions the different methods suggested for combating them. We scarcely think that he has attached sufficient importance to scurvy, as one of the active causes for non-union of fractures, and, consequently, he has not given due consideration to the remedies to be employed in that state of the constitution. We remember well a case that gave rise to much trouble from the non-union of a fracture, and in which many, and even severe remedies had been employed, that subsequently yielded to a steady exhibition of lemon-juice; and again, in the same chapter, we must say that, in our opinion, in his anxiety to do full justice to his own countrymen, he has somewhat wronged Professor Miller, as the plan which he describes as being suggested by Dr. Brainard, of Chicago, is in every particular so similar to that employed by the dis-

tinguished Edinburgh Professor, that it can scarcely, with justice, be termed Brainard's.

If there be one case more than another in surgery that has given rise to controversy both as to its detection, its pathology, and its treatment, it is intracapsular fracture of the neck of the femur. Dr. Hamilton also seems to be fully impressed with this idea, and enters fully into every phase of the subject. Many years ago, whilst still an apprentice, we remember a case coming into hospital, and, being asked by the surgeon on duty, one of the very first Ireland has produced, the nature of the accident, *a bruise* was our answer; the surgeon in question made no reply, but, after a most careful examination of the limb, turned to us and said, "This case will be a lesson to you all your life; it is a fracture of the neck of the thigh-bone," and yet that woman walked out of hospital perfectly well, in less than ten days. Not one month ago we were sent for to see an old lady who had tripped in the carpet crossing her room, and, after a most careful examination of the limb, came to the conclusion that there was a fracture of the neck of the femur; but the case that had occurred in our pupilage had made so strong an impression on us that we were most guarded in our diagnosis; and well did it turn out for us that we were so, for this old lady has been up and about perfectly well for some days past. Many such instances might be recorded by every surgeon in any practice, and their insertion here would be but the repetition of a twice-told tale; but of this we are satisfied, that those instances of bony union in such accidents that we read of, *unverified by dissection*, are most probably but severe bruises, and by no means examples of the fracture in question.

The *questio vexata* of bony union has full justice done it by Dr. Hamilton, and perhaps the most gratifying portion of this subject is the manly way in which he vindicates the character and reputation of our late distinguished countryman, Sir Astley Cooper. It is most gratifying to find the author as jealous of the fair fame of one who has gone from amongst us,—but whose name cannot perish so long as surgery is to exist as a science, or its literature to be preserved,—as could be one of his own countrymen. The passage is a long one, but it breathes so fine a spirit, it so completely uproots an idea originating in a mistake, and kept alive either by ignorance, or viler motives still, that we hesitate not to extract it here, and for the future we sincerely trust that we shall no longer be exposed to repetitions of this error.

"*Prognosis.*—The question of bony union after a complete fracture of the neck of the femur within the capsule, has occupied the

attention of the ablest surgeons and pathologists for a long period; and while great differences of opinion have been expressed as to the probability of the occurrence, and as to the value of the testimony on the one side or the other, very few have ventured to deny its possibility.

"Among these latter are found, however, the distinguished names of Cruveilhier, Colles, Lonsdale, and Bransby Cooper. It has been affirmed, also, that Sir Astley Cooper taught the same doctrine, but with how much show of reason the following paragraphs from his own pen will determine:—

"'In the examinations which I have made of transverse fractures of the cervix femoris, entirely within the capsular ligaments, I have only met with one in which a bony union had taken place, or which did not admit of a motion of one bone upon the other. To deny the possibility of this union, and to maintain that no exception to the general rule can take place, would be presumptuous, especially when we consider the varieties of direction in which a fracture may occur, and the degree of violence by which it may have been produced. For example, when the fracture is through the head of the bone, with no separation of the fractured ends; when the bone is broken without its periosteum being torn; or when it is broken obliquely, partly within and partly externally to the capsular ligament, I believe that bony union may take place, although at the same time I am of opinion that such a favourable combination of circumstances is of very rare occurrence. Much trouble has been taken to impress the minds of the public with the false idea that I have denied the possibility of union of the fracture of the neck of the thigh bone; and, therefore, I beg at once to be understood to contend for the principle only, that I believe the reason that fractures of the neck of the thigh bone do not unite is, that the ligamentous sheath and periosteum of the neck of the bone are torn through, that the bones are consequently drawn asunder by the muscles, and that there is a want of nourishment of the head of the bone; but I can readily believe that if a fracture should happen without the reflected ligament being torn, that, as the nutrition would continue, the bone might unite; but the character of the accident would differ; the nature of the injury could scarcely be discerned, and the patient's bone would unite with little attention on the part of the surgeon.

"'In proof of the correctness of my opinion, I enumerated, in the early editions of this work, forty-three specimens of this fracture, in different collections in London, which had not united by bone. At the present day these might be multiplied, were it necessary.

"'Such has been the accumulated evidence of the want of power of the neck of the femur to unite by bone, in my practice of forty years, during which period I have seen but two or three cases which militate against this opinion, for many of the preparations which have been brought for my inspection, as specimens of united fractures of this part, have proved to be nothing more than the result

of the changes concomitant with old age; and in many of them the two thigh bones of the same subject had undergone the same alteration in texture and in form.'

"The following passages from a communication made by Sir Astley to the London Medical Gazette, for the 25th of April, 1834, are equally pertinent:—

"'I find in a report of the Baron Dupuytren's lecture, that he attributes to me the opinion that fractures of the neck of the thigh bone, within the capsular ligament, not only "never unite, but that it is impossible that they should unite by bone."

"'It is quite true that, as a general principle, I believe that those fractures unite by ligament, and not by bone, as do those of the patella and olecranon. But I deny that I have ever stated the impossibility of their ossific union; on the contrary, I have given the reason why they may occasionally unite by bone.

"'The following are my words: "To deny the possibility of their union, and to maintain that no exception to this general rule may take place, would be presumptuous,"' &c. &c.

"In conclusion, Sir Astley remarks:—'I should not have given you this trouble, nor should I have taken it myself, but for the respect I bear my friend, the Baron Dupuytren; for although I have already submitted myself to be misrepresented by many individuals, yet I should be sorry to be misunderstood by so excellent a surgeon, and so valuable a friend, as Le Baron Dupuytren.'

"What apology now can be found for a writer who, in a lecture before the Royal College of Surgeons, delivered so late as the year 1858, uses the following language:—

"'It is well known that Sir Astley Cooper always taught the doctrine that fractures of the neck of the thigh bone were incapable of being repaired by osseous matter; and that in the whole course of his practice he had never met with a single instance, nor could he meet with any one who had seen a case where such an occurrence had happened; and that union within the capsular ligament (when any such union takes place) is always by membrane. However, it appears that he had no sooner published the last edition of his work "On Fractures and Dislocations," than Mr. Swan forwarded to him a specimen of the thigh bone, in which the fracture of the neck had become reunited by osseous matter. Sir Astley retained the specimen until his death, and it appears that he never had the courage or policy to promulgate the discovery of the error of that doctrine which had so pervaded his mind, and which had misled the profession during a perod of forty years.'

"What pusillanimity is apparent in this repetition of a slander which had been refuted a hundred times by Sir Astley, but who, being now dead, might be assailed with impunity! Do not the surgeons of the Royal College who listened to these ungenerous insinuations know full well their falsity? or is it possible that they derived a secret pleasure in hearing these insults cast upon one who, although he had done more than any other man to exalt the fame of

English surgery, had, nevertheless, been only lately their rival, and from the shadow of whose colossal form they were just beginning to emerge into light. Sir Astley, so far from denying, frankly admitted its possibility, and explained the circumstances under which he believed it might occur. The true point in dispute was, whether certain cabinet specimens were actually examples of complete fractures, wholly within the capsule, united by bone. Some of them, Sir Astley thought, were only examples of chronic rheumatic arthritis, or of interstitial or progressive absorption Some were partial rather than complete fractures; others were partly within and partly without the capsule; and for this he was accused of wilful blindness or stupidity, chiefly by those who themselves being the owners of these rare pathological treasures, might possibly have felt somewhat annoyed at seeing their value thus depreciated, and who, no doubt, would be quite as apt to fall into blindness and partisanship as Sir Astley himself. The truth is, however, that although the claim has been set up and stoutly maintained for more than thirty cabinet specimens, in one part of the world or another, a majority of these, including several whose claims were urged upon Sir Astley, have been at length declared by all parties unsatisfactory, or absolutely fictitious, and only a fraction of the whole number continue to be mentioned by any surgical writer as probable examples."

We cannot conclude our notice of Dr. Hamilton's work without reference to the woodcuts with which the entire letterpress is so profusely illustrated; admirably executed, they must prove of the greatest use to the industrious student, and are a convincing proof, if such were necessary, of the ingenuity, zeal, and untiring industry of our transatlantic surgical brethren. In his description of splints, however, we miss the admirable instrument of Dr. Butcher, of this city. We the more regret this, as we feel convinced that the omission arises from the author's not having met with a description of it, as we are so impressed with his justice, candour, and appreciation of what is intrinsically excellent, that, had he been acquainted with it, he would have given his readers the benefit of participation in his knowledge. The admirable apparatus also of Dr. L'Estrange, of this city, for the reduction of dislocations, merited more than the passing allusion to it; but for these, and a few other minor offences, the author has amply compensated, by the production of a work of which American surgery may well feel proud, and which we expect to see long a standard one on the subject of which it treats.

Blood Disease. By J. VAUGHAN HUGHES, M.D., M.R.C.P.L.; Knight of the Order of St. Maurice and St. Lazarus; formerly Physician to the Bedford General and Fever Hospitals; late acting Staff Surgeon to the British Forces in the Crimea; Successful Competitor for the Warneford Gold Medal for a prize essay on the Blood in 1845. London: Churchill. 1859. 8vo, pp. 132.

WHEN we met with this Essay, "dedicated to the reflecting minds of the medical men of the rising generation," and purporting to be devoted to the special consideration of what is understood in these days as constituting blood disease, we hastened to peruse it, eager for the clinical researches, chemical analyses, microscopic observations, and the pathological and physiological deductions that were, we hoped, to remove the vagueness and obscurity that have hitherto involved the subject of "blood disease." But alas! we have seen our fondest hopes decay. Our visions were sweet, were heavenly; but they are past. The gainer of the Warneford prize essay on the Blood, the knight of St. Maurice and St. Lazarus, has treated us but to the crumbs that have fallen, from time to time, from the tables of Prout, Holland, Todd, Rigby, Garrod, and others; but has not given us one original observation, not one newly observed fact,—has not added from his own stores one crumb to those he has garnered for our use from the stores of others. We are far from objecting to accept even crumbs from the richly supplied tables under which Dr. Hughes has been sweeping; but we do object to receiving even the best of viands rifled from utterly unacknowledged benefactors; and, though of rather voracious appetites, we do protest with both our hands against being obliged to partake of such viands, accompanied by depreciatory remarks concerning our real benefactors, and self-commendations, however delectably insinuated, on the part of the immediate provider of the feast.

PART III.

MEDICAL MISCELLANY.

TRANSACTIONS OF THE BELFAST MEDICAL SOCIETY.

SESSION 1859–60.

FEBRUARY 6, 1860.

DR. PATTERSON, PRESIDENT, in the Chair.

DR. ROSS read the following *Observations on Inflammatory Head Affections :—*

I do not intend to give even a cursory view of this subject; my purpose rather is to state what I know of it, from observing its course in a dozen or two cases.

In some of these the disease was primarily inflammatory, and were examples of acute or chronic idiopathic inflammation of the brain and its membranes; in others the affection was secondarily inflammatory, and were instances of acute hydrocephalus or softening of the brain from tumours, or injuries, or apoplectic clots, or syphilitic disease of cranium, &c.

Semeiology of Cerebro-Meningitis.—Convulsions were of frequent occurrence, rarely in the early, often in the advanced stages. In the following case they ushered in the attack :—A woman aged about thirty-five was suddenly seized, just after a menstrual period, with general convulsions and insensibility; after the bowels had been freely opened, they ceased, and consciousness returned; severe headache was now complained of, and her countenance presented a confused, stupid look. This state yielded partially to the free use of cathartics, mercurials, and leeching; but, after a few days of apparent improvement, coma, paralysis, and death unexpectedly supervened.

Severe headach was invariably a prominent symptom, and continued till insensibility or recovery took place. In many it seemed

to engross the patient's whole attention, and to be the chief cause of suffering.

Delirium, tending to coma, was seldom absent, and was generally a mild, rather than a violent derangement of the mind.

Paralysis, with tonic convulsions of one or more limbs, sometimes preceded death; slow and deep breathing, or, as it has been appropriately termed, sighing respiration. This sign, no doubt, results from pressure on, or disordered state of the nervous centre, and appeared to me to correspond with the sluggish action of the heart and circulation, and bowels.

The pulse presented one or more of the following changes from its normal state :—Slowness, irregularity, frequent variations in its number and strength; as death approached, it became very quick; throbbing of the carotid and temporal arteries,—we see a corresponding change in the circulation of a finger which is the seat of whitlow. What appeared most remarkable in my cases was the combination of great constitutional disturbance, with a pulse under the natural frequency. How striking the contrast with fevers and other serious inflammations!

Nausea and vomiting, without any assignable cause, as gastro-enteric derangement, or nauseating medicine, of considerable duration, and obstinately resisting treatment, were the most constant and the most pathognomonic symptoms, and gave me the greatest assistance in the diagnosis of the obscurer cases.

Obstinate constipation I have often met with, and I consider it a symptom of much value.

Treatment.—I am not aware of any disease in which free general bleeding, followed by leeching, is so essential and so well borne.

Repeated active purgatives come next in importance, and by diverting the force of the circulation from the head, and unloading the abdominal organs, they generally give more or less immediate relief.

The stomach is sometimes so irritable that it will tolerate no cathartic so well as calomel, which is a very good medicine to commence with; we should, however, follow it up, after a short interval with croton oil, or the saline aperients and a turpentine enema.

When the nausea and vomiting were extreme, a mild emetic appeared to me to be useful in allaying it. The controlling power of mercury in inflammation, as demonstrated in iritis, must not be forgotten; no time should be lost in introducing it into the system by the mouth, and by inunction locally; we must shave the head, elevate it on a hair pillow, and keep it cool by the application of pounded ice, and the occasional use of the cold douche.

Counter-irritation by blisters to the nape comes to our aid after the violence of the inflammation is subdued, and if our patient gets comatose, he must have a cap of blistering ointment applied to the scalp, or the croton oil liniment freely rubbed in at short intervals, till an abundant crop of pustules is produced.

Proper ventilation, quiet of mind and body, removal of every-

thing that would be a source of irritation, as light and noise, are absolutely necessary for the welfare of the sufferer.

Low diet, as gruel, panada, and barley-water, should be the principal food, from which we must advance cautiously to more nutritious support.

Acute Hydrocephalus.—Its pathology corresponds with that of phthisis: in both, constitutional tuberculosis precedes local disease; there is unhealthy assimilation, and consequently diseased blood, marked by derangement of the vital processes. Instead of healthy and organizable, a depraved structure, incapable of organization, tubercle, is deposited in the brain in hydrocephalus; in the lungs in phthisis. This deposit acts as a foreign body, and, wherever placed, too often excites inflammation and effusion. I need not say how vitally important is a due recognition of these facts.

Diagnosis.—If a child of from one to two years of age gets emaciated, has a capricious appetite, and a tendency at one time to constipation, and at another time to diarrhœa; if the motions are unnatural; if there be restlessness and fretfulness at night, and perspirations on the face during sleep; if the face be pale, and the eyes preternaturally bright; if the mind be precocious; if any relative has been the subject of hydrocephalus, or phthisis, or chronic peritonitis—for I have as little doubt of the hereditary nature of tuberculosis as I have of the transmission of family likeness—I will not say that hydrocephalus will necessarily follow; but of this I am certain, that I have too often seen these signs its precursors.

When tubercle is deposited, and inflammation and effusion take place, the signs and symptoms will closely resemble those of cerebro-meningitis already detailed.

Treatment.—If we are consulted before local is superadded to constitutional disease, our prognosis may be hopeful. For this stage, careful attention to the laws of hygiene—as healthful residence in the country, change of air, regulation of the food and of the bowels, open-air exercise, daily use of the bath, no over-excitement of the mind—should be attended to.

If there be diarrhœa, we must check it, and give the tincture of bark. Our best tonics are cod-liver oil, small doses of quinia, and the iron wine. The gums must be freely scarified, if necessary.

In the more advanced stages, when there are nausea and vomiting, constipation, variable pulse, cerebral respiration, retracted abdomen, squinting, and other convulsive motions, our chances of success will be almost, if not altogether, nil. I have tried the iodide of potassium without any advantage. I would be inclined to rely most on small repeated doses of calomel or gray powder; small blisters to the nape and behind the ears; regulation of the bowels by enemata; and support of the child's strength by a mild, unstimulating diet.

Primarily and secondarily, *inflammatory softening* of the brain presents one with so large a subject, that I can only glance at one or two of the salient points. It is now clearly proved that we may have ramollissement, quite independent of inflammation, from diseased

heart and arteries, &c., and consequent deficient blood supply to the cerebrum. In a person so affected there is generally a loss of some of the mental faculties, paralysis of one or more limbs, or the constitution is aged or broken up, and the cornea presents the arcus senilis. Instead of the old and pernicious system of bleeding and reducing such cases, we now adopt with advantage a very opposite practice—namely, generous regimen, tonics and stimulants, and a moderately open state of the bowels.

Our chief guides in the diagnosis of inflammatory softening of the brain are manifestations of cerebral lesion, as mistaking one word for another in speaking or writing, loss of memory, confusion of ideas, despondency, headach, difficult articulation, paralysis, with early rigidity of the muscles, or permanent flexion of one or more limbs, or numbness of some portion of the body.

Treatment.—Antiphlogistic measures, as general or local bleeding, or both, free purgation, shaving and elevation of the head, application of ice, and counter-irritation. Perhaps no single remedy will give us so much satisfaction as a mild mercurial course; perfect relaxation from mental exertion and accustomed routine; and, when convalescence is established, travelling, involving, as it does, so much variety of scenes and circumstances.

In connexion with the subject of this paper, I cannot forbear alluding to one who took an active and successful part in the elucidation of cerebral diseases—the late Dr. Todd, of London. By his early removal from an almost unexampled career of success, honourably and deservedly attained to, medical science has lost one of its ablest cultivators, and the medical profession one of its brightest ornaments. Altering the words of our greatest poet, we may apply them to him:—"The good he did lives after him, and is not interred with his bones." Bear witness, his anatomical and physiological works, his clinical and other lectures, his success in improving medical education, and in founding King's College Hospital, monuments of his fame more enduring than bronze.

March 5, 1860.

Dr. Patterson, President, in the Chair.

Dr. Pirrie, Physician to the Belfast Lying-in Hospital, read the following *Observations on the Treatment of Puerperal Eclampsia:*—

It is now about two years since I directed the attention of the members of this Society, and my professional brethren, to the modification of the usual routine treatment of puerperal convulsions based upon more distinct and clearer views respecting the true pathology and etiology of this frightful and heretofore so fatal a complication of pregnancy and labour. The following extract is from the introduction to that paper:—

"I have long been dissatisfied with the *routine practice*, and its results, in cases of puerperal convulsions. By routine practice, I need scarcely say that I refer to bleeding, which in its various forms

has been recommended most urgently by almost all of even our modern authorities in obstetrics. Thus, we everywhere meet with expressions such as the following:—'Bleeding is our great reliance.' 'The lancet is our sheet anchor; and blood may be taken to a very large extent.'—(Ramsbotham). 'If there be a case in which the bold and daring use of the lancet is demanded, it is the case of puerperal convulsions.'—(Meigs). 'The first thing to be done is to take away blood from the arm or temporal artery largely and in a full stream.'—(Churchill). 'In the first rank, both as prophylactic and curative, are to be placed sanguine emissions.'—(Cazeaux). But that such was the universal practice, I need cite no authority, as I believe all of us have been in the habit of thus treating our cases of puerperal convulsions, as I was myself till some time ago, when I happened to have a case of convulsions occurring during the progress of Bright's disease of the kidney in a male, and a case of puerperal convulsions in a pregnant female before labour, under my care about the same time. I was then most forcibly struck with the similarity of the signs and symptoms in the two cases; in both there was œdema of the face and upper extremities, accompanied by albuminuria, and the paroxysms of convulsions in both were absolutely identical. I treated them both on the same principles, of which bleeding formed no part, as being virtually different stages of the same disease, and had the satisfaction of seeing the case of puerperal convulsions recovering without a trace of remaining disease; and the case of Bright's disease, although looked upon at one time as actually moribund, so far recovered as to be able to leave hospital in decidedly an improved state."

Since that time it has fallen to my lot to see no less than *six* cases of *true* puerperal convulsions (including my hospital cases, and others which I saw in consultation with some professional friends), and as these would represent the average of cases occurring in more than 6000 cases of labour (Ramsbotham); and as in all these cases I have carefully satisfied myself of the true nature of the affection, and have, as far as possible in them all, endeavoured to carry out the line of treatment I then indicated; and as I have every reason to be more than satisfied with the result, I think I am justified in again calling your attention to this subject, especially when I recollect with what anxiety I watched the result of this practice in my earlier cases, opposed as it was to the teaching of almost all, if not all, of our British authorities in obstetrics. Dr. Ramsbotham, in a paper published the other day, on a case of convulsions, reiterated his opinion that puerperal eclampsia is merely a modification of cerebral apoplexy, and to be treated accordingly.

That there is more or less of *cerebral congestion* accompanying the paroxysms of puerperal eclampsia, no one who has seen anything of the disease can deny; and I admit the possibility of this congestion being followed in some *rare cases* by effusion, or even rupture of some of the cerebral vessels; but I assert, nevertheless, that this cerebral congestion is *not the primary* disease, but is entirely secon-

dary, and a direct consequence of the spasmodic action of the muscles of respiration interrupting the oxygenation and due circulation of the blood.

For the last twenty years it has been admitted, from the researches of Simpson, Lever, Cormack, Cazeaux, Blot, and others, that *albuminuria* was often associated with puerperal convulsions; but I believe we are now justified in going a step further, and maintaining that every case of *true puerperal* eclampsia is not only accompanied by *albuminuria*, but is *caused* by it.

Now, if we bear in mind that in *albuminuria* we have the kidneys permitting the exudation of an important constituent of the blood, (serum), while at the same time they retain within it excrementitious matters which should have been eliminated, and that the blood, thus depreciated and contaminated, circulates with difficulty through the systemic capillaries, giving rise to œdema, and affords to the brain and nervous tissues a supply insufficient and inadequate for their nutrition, and the healthy performance of their functions,—we must admit, that a condition very analogous, if not identical with *anemia*, is produced. This explanation of the mode of production of puerperal convulsions is remarkably corroborated by the most interesting researches of MM. Kussmaul and Tenner on "Epileptiform Convulsions from Hæmorrhage," published in the last volume of the New Sydenham Society. They have demonstrated, from many experiments, that insensibility, unconsciousness, and general clonic and tonic spasms (constituting the essential phenomena of puerperal eclampsia), may be produced *at will*, by suddenly interfering with the nutrition of the brain, and *could not* be produced by any amount of congestion or plethora.

Cause of Albuminuria.—Simpson, who was one of the first to point out the very close connexion that exists between albuminuria and puerperal eclampsia, although he hesitated to place them in the relation of cause and effect, described them as, perhaps, simultaneous or successive effects of one common central cause, viz., a pathological state of the blood, to the occurrence of which pregnancy in some way peculiarly predisposes.

I am more inclined to refer it to congestion of the kidneys, caused by a direct pressure of the *gravid uterus*, as suggested by Dr. Cormack. Many arguments may be adduced in support of this view of the mode of production of *albuminuria*.

1st. The vast preponderance in the numbers of *primiparæ* so affected, amounting to nine-tenths; in these the abdominal walls do not yield so rapidly, and, consequently, there would be greater pressure exercised on the renal vessels. This will also explain how excessive distention of the uterus, from *plural* pregnancy or dropsy of the amnion, is so often assigned as a cause of puerperal convulsions.

2nd. Another argument is, the rapidity with which the albumen disappears from the urine after delivery—"Sublatâ causâ, tollitur effectus."

Sir Charles Locock, in the article "Convulsions," in the Cyclopædia of Practical Medicine, in assigning mental emotions, especially depressing ones, as possible excitants of the paroxysms, says: "It has long been remarked, that unmarried women are more particularly liable to be sufferers from convulsions, from the shame and distress under which their children are usually born." Now, if we bear in mind, the efforts that these women are continually making to conceal their position from their friends and the public, we might, perhaps, conclude, that direct physical pressure had more influence in the production of the convulsions in these cases than mental emotions.

It will be also plainly manifest, how a stomach distended from over-repletion, and how constipated bowels, often assigned as causes of puerperal eclampsia, may really become so, by increasing the pressure upon the renal vessels. We may even adduce the *results of treatment* as an argument in support of this view of the etiology of the disease, viz., that no matter which treatment be adopted, once convulsions have occurred, they will in almost every case be repeated till the evacuation of the uterus effectually removes the pressure, and till the resulting effects of that pressure begin to disappear from the blood and urine.

The treatment I adopt, and would strongly recommend, is, if not based upon, at all events consistent with these views of the pathology and etiology of the disease. It is briefly, first, *relieve* the pressure, not on the brain, but on the renal vessels; second, eliminate noxious matters from the blood; third, stimulate the kidneys to healthy secretion.

These rules are applicable under all circumstances, whether the convulsions appear during pregnancy, or labour, or after childbirth. Suppose puerperal eclampsia to occur, say in the eighth month of pregnancy, without any appearance of labour, we should first attempt to *relieve pressure* by acting freely on the stomach and bowels, thus reducing the contents of abdomen, and at the same time fulfilling the second indication of eliminating noxious matters from the circulation; and we shall best restore healthy urinary secretion by the administration of the vegetable acids, say benzoic and tartaric acid, as recommended by Braun and Frerichs. Should these means fail, and the convulsions still continue menacing the patient's life, I have no hesitation in stating that we are more than justified in proceeding more effectually to fulfil the first indication—that of relieving pressure by bringing on labour, and carefully evacuating the uterus.

Should convulsions set in during the progress of labour, our object should be to hasten the termination of labour, and, by the use of the means suitable to each particular case, promote the prompt and careful evacuation of the uterus, and thus effectually meet the first indication, while, at the same time, by the administration of purgatives and vegetable acids, we attend to the other indications.

Chloroform has been highly spoken of by many as moderating the severity and frequency of the paroxysms. I have used it, and believe it to be a useful adjuvant when it is necessary to temporize

in cases where delivery cannot be immediately accomplished; and may be safely used, as long as the patient retains any consciousness in the intervals of the paroxysms. In connexion with the administration of chloroform, I would direct attention to a most important fact, discovered by Kussmaul and Tenner, in the course of their experiments, viz., that convulsions could not be induced in animals that had been subjected to *etherization*.

I need not say, that I would entirely prohibit venesection, and would earnestly dissuade my brethren from resorting to general bleeding in *albuminuria*, either as a prophylactic or curative, as I firmly believe its tendency is to increase the severity of the paroxysms, to debilitate the patient, and to delay the recovery, by the promotion of secondary affections in cases where it does not directly tend to produce a fatal result.

Local bleeding, leeches to the temples, or cupping the nape of the neck, with cold lotions to the head, may possibly be beneficial in moderating the secondary congestion where it is excessive. I have tried them, but I cannot say with any direct benefit.

In lieu of the warm bath, which must in all cases be troublesome and difficult to administer, and in many impossible, I would recommend sponging the surface with warm vinegar and water.

With respect to the treatment adopted in the six cases which have come under my observation since I last addressed this Society, without entering into details, I will simply state the results. In *three* cases, venesection to a greater or less extent was used; *one* of these, occurring in a neighbouring village, was bled very largely before I saw her; the convulsions continued, and she died the next day. *Another*, who had but trifling œdema, and one slight convulsion before delivery, was also bled to the extent of sixteen ounces before I saw her; there was no return of the convulsions, but her recovery was slow.

In the third case, I, myself, while waiting for the forceps, took six ounces from the arm, with the view of moderating the secondary congestion, in a strong young woman from the country, in whom the paroxysms had been allowed to continue for several hours without interference, under the idea that she was suffering from simple epilepsy. She recovered well.

In the other three cases, the treatment I have endeavoured to inculcate in this paper was closely followed out, and with the best results, although two of them were of the most formidable character; one of them occurring under circumstances that could scarcely be aggravated.

Of the six cases, four were delivered by forceps, one child dead; one delivered naturally, child living; and one by version, child dead.

I will conclude by recapitulating the more important points in the form of distinct propositions:—

1. Convulsions are *not* caused by plethora or congestion of the brain, but by anemia or defective nutrition.

2. Depletion aggravates the tendency to convulsions.
3. All cases of true puerperal eclampsia are associated with and caused by albuminuria—
4. Which is most probably caused by renal congestion, the effect of direct pressure.

The indications for the rational treatment are:—

1. To relieve pressure, the cause of renal congestion.
2. To eliminate noxious matters from the circulation, and
3. To stimulate the kidneys to healthy secretion.

P.S.—Since writing the above, I have had an opportunity (through the kindness of my frind Dr. Corry), of seeing a case of albuminuria with œdema occurring as early as the second month of pregnancy, when, of course, the pressure exercised on the several vessels would not account for the albuminuria. I do not consider that this very interesting case in any way invalidates the statements I have made above. I look upon this case as an accidental complication of pregnancy with previously existing *organic* disease of the kidney. It is the woman's *fourth* pregnancy; the others were unaccompanied by convulsion or œdema. Should convulsions occur, as most probably they will, early, the case would present a combination of phenomena almost identical with those observed in *true puerperal eclampsia*, whilst at the same time there existed marked points of difference in the history of the cases, and in the causation and sequence of the symptoms, sufficient to modify materially the prognosis, and, in a measure, the treatment also.

April 2, 1860.

Dr. Patterson, President, in the Chair.

Dr. Browne read the following paper on *Epiphora, or the Watery Eye*:—

The subject to which I wish to direct the attention of the Society this evening, is the nature and treatment of the disease named Epiphora, or the watery eye. This condition of the eye depends upon two causes: either such a flow of the tears from the secreting apparatus as cannot be carried off by the derivative apparatus, the latter being in a healthy condition; or, being diseased, is unable to perform its functions, the supply of tears not exceeding the due amount of secretion. Of the former condition we have a familiar example in the overflow which takes place under mental emotion, or any local stimulus; this state cannot be considered as one of disease, but, if there be an over-secretion of tears under ordinary and unexciting circumstances, we must regard it as one, at least, of disordered function. To this part of the subject it is not my intention on the present occasion farther to refer, but I would rather crave your attention to that condition of the derivative lachrymal apparatus, in which we find there is a constant overflow of tears—*stillicidium lachrymarum*, without any specially increased secretion. Before entering, however, upon the pathological condition of the parts, I shall briefly

remind the Society of the structure and anatomical relations of the apparatus in question. On looking at the eyelids, a slight elevation or angular projection will be observed upon either, about two and a half lines from the inner commissure; when the lids are everted, a minute opening will be seen on the apex of each little projection; these are the puncta lachrymalia; the mouth of each is surrounded by an elastic ring, and is directed slightly backwards and inwards. The puncta are the open mouths of the canalicules; these latter, situated on the inner portion of the margin of either eyelid, and beneath its mucous membrane, are at first directed downwards, outwards, and forwards; then, making a sharp angle, they pass inwards and a little backwards into the lachrymal sac, describing a slight curve in their course, and terminating close together, their length being throughout about five lines, and their point of termination being exactly behind the inner tendinous attachment of the eyelids. The sac is the upper third of the lachrymal canal, and is formed by the lachrymal and superior maxillary bones, the cavity being completed by fibrous membrane; this canal, under the name of nasal duct, passes downwards, and a little backwards and outwards, from the perpendicular, and opens into the inferior meatus of the nose, under cover of the lower spongy bone; the canal, about one inch and a quarter in length, is lined with mucous membrane throughout, a fold of which, when the sac is laid open, may be remarked situated a little below the opening of the canalicules, partially separating the sac from the nasal duct, while another fold of the mucous membrane protects the mouth of the canal. In connexion with the apparatus just described, there is an arrangement of muscular fibres which is worthy of notice. Besides the fibres of the orbicularis muscle, which run in curves from the lower border of the tendon of the eyelids, passing along the lachrymal ducts, a thin strip of muscular fibres, about a quarter of an inch in breadth, arises from the vertical ridge in the lachrymal bone, passes forwards and outwards; at the lachrymal sac the fibres bifurcate, and pass on to the eyelids, to become blended with the orbicularis muscle; in this course some fibres are attached to the posterior surface of the lachrymal ducts, and some few fibres surround the ducts near their punctal openings. Immediately within the inner commissure of the eyelids the lachrymal caruncle is situated. This is composed of fibrous tissue, in which follicles are imbedded, secreting a fluid similar to that afforded by the Meibomian glands. A fold of the conjunctiva, of a crescentic form, and containing at the edge of the fold a strip of fibrous tissue, is connected closely to the base of the caruncle; while this membrane, where it forms the covering of the caruncle, is thrown into two minute wing-like processes, which extend from the sides of the caruncle to the upper and lower eyelids, where they are attached just behind the puncta and lachrymal ducts. I trust the members will not deem me impertinent for dwelling upon these structural relations. I have, however, been thus minute in my description of the parts connected with the derivative lachrymal apparatus, that the Society may see

the rationale of the treatment I pursue when those structures take on disease.

Like all other parts of the system that have a mucous membrane, the lachrymal canals throughout are liable to a certain inflammatory action, in which there is thickening of structure, with an increase of the natural secretion; this is the common catarrhal inflammation, either commencing in, and confined to the lachrymal sac and canals, or spreading from the conjunctiva to those parts. This is the simplest form of morbid action, and can be usually removed by very simple means, such as a sedative and astringent collyrium. Of this complaint, too, we have a familiar example in the state of the eye and its lachrymal apparatus, from what is popularly known as "a cold in the head," and which state arises from the parts participating in the general perverted action of the mucous membrane lining the nasal passages. One persistent symptom in the affection always is the overflow of the tears, and the mucous secretion which takes place, partly from the increased secretion from the lachrymal gland, consequent on the irritation of the conjunctiva, and partly from the thickened and obstructed condition of the lachrymal passage. As the cold in the head disappears, the conjunctiva is usually restored to its normal state, and the tears cease to overflow. Should, however, there be repeated attacks of catarrh, the lachrymal canals may become thickened, and take on a chronic perverted action. In this condition the canalicules and nasal duct may be nearly closed up, so that the tears are constantly flowing over the cheeks; and, should this state be permitted to remain without proper treatment, the entire canals may be almost, if not quite, obliterated. Of course the nasal duct, lodged as it is in a long and unyielding passage, becomes first closed up, while the sac becomes distended with mucopurulent secretion, which constantly flows out by the pressure exercised by the orbicular muscle through the canalicules and puncta, and which secretion can be made to regurgitate in quantity, by making firm pressure upon the distended sac. We usually find that in cold, but especially damp weather, this affection becomes increased, while in the fine dry season it frequently almost disappears. The general health of the sufferer is mostly below par, and the patient is commonly of the strumous diathesis. With this state of things, then, it is clear that the indications for treatment are evident. If the circumstances of the patient permit of a change to a dry, mild climate, I feel satisfied that such change should be advised. If, on the contrary, as is most frequently the case, the person be precluded from making the attempt, we are called on to do the best we can. The course I generally pursue is, first, to improve the digestive and secretory systems, both of which will commonly be found to be deranged. Rhubarb, in powder, and soda, or infusion of rhubarb, with Rochelle salt, in moderate doses, given every night, with the syrup of the iodide of iron and the iodide of potassium combined, exhibited after every meal, are the medicines I use; while I direct special attention to the diet, clothing, exercise, and modes

of life. In fact, I endeavour to inculcate sound sanitary principles, since the non-observance of these would render any medicinal course almost useless. The local treatment I change according to circumstances, always observing to apply those medicaments which seem not to increase the irritation of the parts. These applications, consequently, vary. With one person the nitrate of silver applied in the solid form to the conjunctiva of the lower eyelid will prove most beneficial, will act in the most salutary manner, as an astringent, direct sedative and promoter of healthy action, while in another, though rarely, it will cause great irritation and increase of pain. Before, however, making any local application, I explore the lachrymal passages carefully. With this view, I press out and examine the secretion or contents of the sac, and observe whether they are simply inspissated mucus, or contain any purulent matter; if the latter, I am rendered more cautious in my treatment, as there may be, nay, often is, some disease of the lachrymal bone. If I am satisfied that the sac merely contains mucus, I am led to infer that the disease is one of chronic inflammation of the lining of the sac and nasal duct, with more or less obstruction of the latter, and I act accordingly. Having slightly everted either lid, and having drawn it a little outwards so as to straighten the duct, I pass a fine probe into each punctum in succession and along the canal into the sac. If the probe be in the lower punctum, I usually move it gently about so as to touch the inside of the sac all around. If it have been passed through the upper punctum, I draw the lid upwards and inwards, and directing the probe downwards and a little backwards, I endeavour to pass it into the nasal duct, taking care not to use force, and so managing its point as not to injure the valve-like fold of the lining membrane which partially divides the sac from the duct. If in this manipulation the patient complains of much pain, it is better to desist, to direct warm fomentation of the part, a mild collyrium, and the application, over the cutaneous covering of the sac, of the tincture of iodine or the compound iodine ointment. After this local treatment has been carried out for a week, the probe may be again introduced, and probably it will be found to pass into the nasal duct. If it do so, one step in the treatment has been gained, and, by a careful continuance of it, the likelihood is that the disease will be remedied.

If, however, the obstruction persists, as evidenced by the constant overflow of the tears and by swelling of the sac from the retained fluid, and if all signs of acute inflammatory action have subsided, another means must be resorted to. It is clear that the puncta, without injury and tearing, cannot admit anything beyond the size of a minute probe to pass, and that this, even if carried through the nasal duct, cannot remove any considerable obstruction. It becomes, therefore, necessary to adopt measures by which the sac and nasal duct can be reached and explored by a larger-sized instrument. With this view, I am in the habit of passing a fine director into the upper punctum and along its canal to the sac, and then of slitting

up the entire duct from its angle to its termination in the sac, and of opening the head of the sac; in this operation I intentionally avoid slitting the punctum, as I consider any interference with it is uncalled for, and the retention of its integrity may be of importance. When the canal and sac have been fairly laid open, a full opportunity will be afforded for properly examining the condition of these parts. The first object should be to clear them of all obstructions caused by inspissated mucus and other secretions; this can be best accomplished by introducing the point of a small syringe—not Anel's, which is really of little use—and injecting tepid water freely. Should the water after some time flow into the nostril and through the lower punctum, it is evidence that there is not complete occlusion of either of these canals. The next step is to explore, by means of different-sized probes, the condition of the nasal duct. If the lining membrane of the sac and duct feel swollen or relaxed, the parts can be touched with nitrate of silver, or a solution of that salt can be injected into them. I introduce the nitrate, in the solid form, by having a platinum probe coated with it; an assistant separates the lids and raises the upper one; this displays the opening that has been made into the canalicule and sac, and I then pass in the probe and rapidly touch as much of the lining membrane as I can reach, after which I inject tepid water and order the use of a sedative collyrium. I may here state that I consider this method of treatment much better than endeavouring to clear the nasal duct by means of Gensoul's sound, introduced through the nostril; that manipulation is not only very difficult, but is necessarily less effective than that by which water can be injected down the duct; therefore I now always open the lachrymal duct and sac, and, by the use of the probe and syringe, can always restore the pervious condition of the parts, where the obstruction has depended upon thickening of the lining membrane, or on the retention of vitiated secretions alone. During this treatment, I may state, I do not omit the external application of the iodine, as I have already mentioned. It may be, that, after the nasal duct has been explored, both it and the sac will be found pretty healthy; if so, a simple collyrium, continued for a few weeks, with tonic treatment internally, will probably remove all symptoms of the watery eye.

It sometimes happens that the *epiphora*, or *stillicidium lachrymarum,* depends upon obstruction in the puncta and lachrymal ducts; in either or both, this obstruction may be partial or complete. The exact site and extent of the obstruction can be determined by the use of Anel's probe, or a strong bristle. One of these should be carefully introduced into each punctum in succession, and carried as far as it will go towards the sac; if the instrument reach the sac through the canals, a larger-sized probe may be used then, or at a future visit, and the parts may thus be cleared and dilated, and the dropping tears may be remedied. But if, on the contrary, the instrument cannot be made to enter the sac through the canalicules, or if, after repeated introduction of the probe, the stillicidium is not

removed, other operative measures will be required. In those cases where the probe can be passed, the operation may be performed either by slitting up the duct along the probe as a guide, or by introducing a fine-grooved director, and sliding the point of the knife along it; in either case entering the knife into the canal at the point where it forms an acute angle with the margin of the lid, and avoiding all injury to the punctum. If partial or complete occlusion of puncta and canals exist, the operation will be somewhat different. When I find that the puncta are open, and the ducts pervious for some distance, I take a No. 7 sewing needle, and mount it in a cedar handle; this instrument I introduce very carefully along the duct to be operated on as far it will go without any force, and then slit up the duct to its point. I next push it on into the sac, and continue the incision along it. In this operation I again avoid the punctum, as I believe that any injury of it is likely to interfere with its special adaptation for the absorption, or capillary-like attraction, of the tears. The reason why I do not wish to slit open the puncta is, that I believe, when the eyelids are closed in sleep, the sides of the canals, that are open during the motions of the lids, become shut, and that then the puncta, being in a normal condition, take up the tears as they do in the healthy condition of the eye. In fact, it is only in those cases where there is occlusion of the puncta that I interfere with them. In such instances—and they are very rare, unless from direct injury, such as wounds or burns—I find the papilla on which the punctum is placed, examine carefully for the closed orifice, pass the needle into it, slit up the duct as far as its angle, then depress the handle of the needle, and endeavour to push it on to the sac, and, having succeeded, I slit up the track. It was one of these cases, arising after a scald, that first drew my attention to the restoration of the canal, and in which, having proceeded as I have related, I was pleased to find that I had been enabled to remedy a very distressing condition. At the same time, I may mention that I had seen a case a short time before that just referred to, in which, after an injury or laceration of the lower lid, I observed that the canalicule which had been laid open continued patent long after the parts had healed around, and performed its functions satisfactorily.

Although operations somewhat similar to those I have mentioned were suggested long ago,—to Mr. Bowman, I believe, the profession are indebted for the first notice of the application of the practice on sound principles; and while, therefore, I do not claim any originality for my views, I may say, that I had learned the principles, and put them in practice, long before I knew anything of Mr. Bowman's operation. Moreover, I had learned that the canalicules, if even open throughout their entire extent, will still perform their functions; and I had observed that, whenever practicable, it is better not to interfere with the puncta.

I imagine that the ducts, from the arrangement of the muscular fibres around them, when once opened, are not likely to close up again; and I believe that in those cases where we have had narrow-

ing of their canals, it is well they should not be permitted to do so. Hence, since my observation of the first case—the one of injury I have just mentioned—I have continued, in all cases where I had slit open the ducts, during the healing process, daily to pass a probe between the slit-up edges of the canal, with the view of keeping it patent.

I have thus endeavoured to lay before the Society my views regarding the nature and treatment of what I consider is the true *epiphora.* There is no doubt that an overflow of the tears may depend upon several causes besides those I have related, but I do not think they come within the compass of this paper; therefore I shall not refer to inflammation or suppuration of the lachrymal sac, with or without a fistulous opening remaining; nor to obstruction of the nasal duct from disease of its bony passage, or from the pressure of fungous growths; nor to obliteration of the sac or duct from direct injury; nor to the disease of the caruncle and its folds of conjunctiva; nor to displacement of the puncta: for although all of these causes do occasion an overflow of the tears, I exclude them from my present notice, as I merely intended to refer to one class of cases, and to the special treatment I pursue in such cases.

The subject is one of great interest; for, while the epiphora which depends upon the causes I have related seems to be a simple disease, it is, to the sufferer, a constant source of irritation and annoyance, and, until recently, the methods of treatment have frequently proved very unsatisfactory. The mode now adopted, on the contrary, generally affords permanent relief.

April 2, 1860.

Dr. Patterson, President, in the Chair.

Dr. Halliday read the following *Case of Pyemia:*—

Mr. President,—My desire on the present occasion is not to propose any new theory, or to elicit any novel mode of treatment, but simply to relate the history of a case which, to my mind, is fraught with interest; which I felt to be difficult, at first, of diagnosis, and as it proceeded (the symptoms becoming more marked) very uncertain as regarded the prognosis. My patient was a young gentleman, aged 24, of strictly temperate habits, who had enjoyed good health up to the period of this attack, save that for the last four or five years he had been subject to headach, chiefly frontal, coming on at no particular time, but very much influenced by every change of weather. Up to Saturday, the 26th of November last, he was in the enjoyment of his usual health, only that the headach had become a little more severe; he stated that, ten days before, he had been exposed to cold upon an outside car.

On this day, the 26th, the pain in the head had much increased, and he complained of chilliness. I found him with a pulse slightly quickened, tongue a little foul, skin somewhat hot; in fact, appa-

rently labouring under an attack of febricula; but there was severe vomiting. I prescribed some purgative and diaphoretic medicine. On Monday, the 28th, the headach being severe, I leeched his temples, and again on Wednesday, the 30th, with some good effect; and on Thursday, the 1st of December, epistaxis set in. I now put him steadily under mercurial treatment, dreading the head affection. Up to Wednesday, the 7th of December, there was little or no change in the symptoms; but on this night, after eleven days of illness, he had a well-marked rigor about 2 A. M.; a second on Friday, the 9th, at 7 P. M.; and a third on Saturday, the 10th, at 6 P. M.; all of which were accompanied by vomiting and perspiration after the attack.

I should have stated that he had never been abroad, but that, years ago, there was a little discharge from one ear, leaving behind a slight deafness, but so slight, that his father, residing in the house with him, was not aware of it.

On this day, Saturday, the 10th, Mr. Browne saw him with me. His pulse was then 100; respiration 18; system slightly under the influence of the mercurial. The pain in the head was much lessened, but there was slight rolling of it, accompanied by some pain or pressure over the mastoid process. Ordered a blister to the nape of the neck and to push the mercurial.

Sunday, the 11th: had a rigor during the night, with vomiting after, and complained of severe pain in the upper and back part of the left thigh, extending into the groin, which was painful on pressure.

Monday, the 12th: rigor at 5 A. M.; vomiting after; no pain in the head; pain in the thigh also relieved. Had another severe rigor at 2 P. M. this day. Ordered two grains of opium twice daily; also citrate of iron and quinia, with beef-tea; and one oz. of wine every third hour.

On Wednesday night he rested badly, and in the morning, about 2 o'clock, the hour at which he generally became worse, he had a fearful rigor, which lasted for half an hour.

December 13th: was gabby during the night, probably from the opium; there is pain on pressure in the left groin; slight œdema of ankle; no well-marked cording of femoral vein.

From this on, the rigors were not well marked; the œdema in ankle increased, and passed up to the knee; but there was no redness of any part; no pain in any joint; nor formation of matter in any locality. He was ordered to continue steadily the nourishment, together with the opium and quinia, and the urgent symptoms gradually gave way, but two months elapsed before the swelling left the limb, and another month ere he regained his usual strength.

TRANSACTIONS OF THE COUNTY AND CITY OF CORK MEDICAL AND SURGICAL SOCIETY[a].

(*Continued from* vol. xxviii., p. 251.)

SESSION 1859–60.

October 19, 1859.

Dr. Gregg, President, in the Chair.

Thoracic Aneurism and Hypertrophy of the Heart.—Dr. Finn exhibited pathological specimens of these affections, and at the same time acknowledged his obligations, for the earlier notes of the case, to the late Mr. Bernard Mazon, of this city, a distinguished student in Queen's College.

Andrew Hickey, aged 28, a cooper, of intemperate habits, was admitted, for the first time, into the North Infirmary, on the 5th of November, 1856, labouring under bronchitis and dyspnœa. For the six preceding years he suffered from "shortness of breath" and fluttering of the heart after the slightest exercise. About four months since he experienced a shooting pain, commencing at the apex of the heart, and extending thence backwards to the left scapula and arm. During the continuance of this pain the left arm became numbed and powerless, and he suffered at the same time from a sense of suffocation, which lasted from three to ten minutes, after which he reverted to his ordinary health. This form of paroxysm recurred once in every fortnight or three weeks. He has been also subject to epistaxis for the last two years, which occurs about once every third month. The glands of the neck exhibited the marks of scrofulous disease inherited from his father. He has never suffered from rheumatism; tongue clean; appetite impaired; pulse 90, wiry and full; visible pulsation of the carotids. On placing the hand over the right sterno-clavicular articulation, a marked fremissement was perceived. This was less perceptible at the left side. A loud blowing murmur was heard over the region of the heart; and a similar murmur, but louder in its pitch, was propagated along the aorta to the distal side of the arch, the maximum intensity being at the right sterno-clavicular articulation. The subject of this case had been six times an intern patient in the hospital. He was admitted on the 2nd of December, 1858, for anasarca and albuminuria. This complication yielded to treatment in about ten days, when he was dismissed.

On the 18th of May, 1859, he was finally admitted, labouring under anasarca and incipient ascites. On this occasion he suffered from orthopnœa to such an extent as to preclude his assuming the horizontal posture for even a limited time. He died, after much suf-

[a] These Reports have been furnished to us by Dr. S. Henry Hobart, Secretary to the Society.—Ed.

fering, on the 27th of June, the immediate cause of death having been gangrene, which attacked the left arm.

Autopsy.—Considerable serous effusion in both pleuræ, and congestion of the lungs. The heart was much hypertrophied, weighing about twenty ounces. The mitral and aortic valves were thickened and congested, having presented in other respects no deviation from the normal state. The portion of the aorta included between the semilunar valves and distal point of the arch was the seat of a vast fusiform aneurism. On exposing the interior of the vessel, a large fibrinous coagulum was found to occupy the space between the points just referred to. The internal and middle coats were in a great measure destroyed, and replaced by calcific and atheromatous incrustations. No breach of continuity of the walls of the sac had occurred at any point.

Remarks.—It is highly probable that the hypertrophy of the heart was secondary, in this instance, to the aneurism. This view is consistent with the well-known retrogressive tendency of structural change, and is further confirmed by the absence of organic disease of the valves, exemplifying, to use the language of the late Dr. Todd, the "remedial" activity of the heart in the presence of arterial disease.

Dr. S. Henry Hobart then read an account of a case of *Double Monster* which had come under his notice a short time before, the particulars of which are published in another part of this Journal. See page 328.

November 23, 1859.

Professor O'Connor in the Chair.

Case of Injury of the Perineum. By Thomas Gregg, Surgeon to the South Infirmary.—The following case of laceration of the urethra and extravasation of urine, taken by my clinical clerk, is of some interest:—

Owen Sullivan, aged 45, usually employed on board a small coasting vessel, of strong robust constitution and ordinarily temperate habits, was admitted into the South Infirmary, June 28, at 5 o'clock p. m. He states that he was standing, at 8 o'clock a. m., on the deck of the vessel, his legs apart over a plank used as a passage from the ship to the quay, one end of which was elevated about two feet from the quay, while it rested about its middle on the edge of the quay, forming a lever; while he was in this position, another stepped on the elevated end, which violently tilted up the other, so that it struck the patient with such force on the perineum as to raise him about three feet in the air. He felt considerable pain and tension in the injured place after the accident, but felt no other inconvenience, and was able to continue at work until about 2 o'clock. He passed water almost immediately before the accident, and felt no desire until the hour just mentiond; he then made an effort to

empty the bladder; and although he felt as if he had done so, he was astonished to find no urine pass by the urethra, but some pure fluid blood; at the same time swelling appeared in the perineum, accompanied by considerable scalding pain. He still continued to work, and about 4 o'clock he made another attempt, with the like result, a further increase of swelling now filling the scrotum, which became much distended.

On admission, the symptoms were as follows:—Surface cold; occasional and severe rigors; pulse frequent and feeble; an appearance of great prostration, and is suffering very great pain; countenance expressive of much anxiety, and he seemed labouring under the effects of a severe shock to the nervous system. On examination, the perineum presents an elastic tumour, about the size of a hen's egg, situated in the mesial line; the scrotum and penis are much distended, the former to three or four times its natural dimensions, and both are of a dark livid colour; there is no external wound, save a slight scrape on the inner side of the right thigh, produced by the edge of the plank; a large-sized gum-elastic catheter was introduced into the urethra; at the distance of about an inch and a half from the orifice the canal was found to be torn, which rendered the passage of the instrument difficult; but this being overcome, it passed on to the membranous portion, where a laceration was discovered so extensive as to completely prevent the possibility of reaching the bladder, notwithstanding every effort with various-sized instruments having been made. On consultation it was agreed to cut down on the membranous portion of the urethra, and, accordingly, a deep incision was made along the mesial line in the perineum, through the tumour, as also three longitudinal incisions, each about three inches in extent, through the scrotum, so as to allow the escape of the extravasated fluid; a large quantity of bloody urine escaped through the opening in the perineum, and on passing in the finger, the end of the catheter, introduced through the meatus, was felt completely uncovered, and the finger could be freely moved in every direction, particularly between the scrotum and pubes, to the extent of an inch and a half; no trace of the urethra could here be discovered; neither could the orifice of that portion of the canal still communicating with the bladder be detected. A poultice was applied over the parts, and a draught, with 40 minims of tincture of opium, was administered.

June 29th. The patient passed a quiet night, comparatively free from pain, except when he attempts to void urine, of which he passed near two pints freely through the perineal opening, none whatever passing through the meatus; no urine trickles through the wound, except during the natural efforts of expulsion, the functions of the bladder not being at all disturbed by the injury; pulse 72; scrotum almost of natural size; the bowels have been confined for some days. He was ordered two pills of blue pill and colocynth immediately, and after six hours 2 oz. of aperient mixture of senna; the anodyne draught to be repeated in the evening.

30th. Slept well; no inconvenience, except scalding pain in the wound in perineum on passing water; in every other respect, as yesterday; bowels freed by medicine; tongue moist and clean.

July 6th. He has continued to improve daily since last report; all the wounds look healthy and healing; those on the scrotum brought together this day by adhesive plaster, and that in the perineum to be dressed with cerate, through which the urine entirely flowed until to-day, when a small quantity passed through the urethra; no instrument, however, can be got into the bladder, although several attempts were made to discover the canal in the perineum.

28th. He now passes the urine through the urethra, but with some difficulty; all the wounds are healed; a small gum-elastic catheter was attempted to be introduced into the bladder, but without success.

29th. Some urine passes again through the perineal wound, but in every other respect the same.

August 10th. He has passed, ever since last report, some portion of urine through the perineum until to-day; several attempts to pass a catheter into the bladder were tried, but without any success; and he was discharged, on the 17th of August, with every prospect of impermeable stricture.

It is remarkable how different we see the effects of extravasation of urine in different individuals. This man laboured under infiltration for some hours before he was seen, and he had not a bad symptom; no sloughing of areolar tissue; on the contrary, from the time the incisions were made he went on well, while the wounds healed kindly. It stands in strong contrast to a man who was admitted into hospital about three months previously; he was a coachman, in apparently robust health, but he had laboured for some years under stricture, and, while attempting to pass water, ruptured the urethra, producing consequent infiltration; he was seen in ten minutes afterwards; having been conveyed immediately to hospital, extensive and deep incisions were made. Yet this man was very near losing his life from the extensive sloughing and irritant fever. No doubt the state of the urine in persons labouring under stricture is more irritating than those who are not. This, of itself, would account for the difference.

November 23, 1859.

Dr. Gregg, President, in the Chair.

Statistics of Decumbency in Tuberculosis of the Lung.—Dr. Finn made the following observations:—

At a meeting of the Medical Society in October, 1855[a], I exhibited a pathological specimen of tuberculous cavity of the lung, and at the same time referred to the amount of suffering which the limita-

[a] See this Journal, vol. xxi. p. 231, N. S.

tion of decumbency to one side (the side unaffected) had entailed on the subject of the case in question. On the same occasion, also, I expressed an opinion to the effect that, in my experience, decumbency was in general inversely as the lung affected, more particularly in those cases in which tuberculosis was limited to one lung. This view was not shared by the members of the Society present, who generally maintained that the decubitus was similar to that which obtains in pleuritis of the liquid or gravitating form. Louis, in his "Researches on Phthisis," observes, "that in some cases, at a certain period of the affection, the patients were utterly unable to lie on the side of the chief cavity, from the increase of cough such position entailed"[a]. He ascribed this result to the fact that, under such circumstances, the elimination of fluid from the cavities was not favoured by gravitation. It is not improbable that the form of pleuritis inseparable from tuberculosis of the lung exerts also some influence in the production of this result. In pleuro-pneumonia, or pneumo-pleuritis, as it is more properly designated by some writers, decumbency on the unaffected side is the rule. The same rule would, in all probability, apply to tuberculosis, were this disease, as is, generally, the former, *limited to one lung*. For the last five years I have tabulated sixty-two cases, and the cases so tabulated consisted, with few exceptions, of such as frequently came under observation. In the early part of this investigation I was assisted by the late Mr. Bernard Mazon, a gentleman eminently qualified to assist in an inquiry of this kind.

I now beg leave to present the result of my observations in a condensed form.

Sex.—Of the cases observed, 29 were males, and 33 females.

Age.—In the males the age varied from 7 to 45; in the females, from 4 to 50.

Lung affected.—In the males the right lung was affected in 10 out of 29 cases; the left, in 14; and both lungs, in 5. In the females the right lung was affected in 13 cases; the left, in 17, and both lungs, in 3 cases.

Decumbency, males.—In 5 out of 10 cases of exclusive affection of the right lung, the decumbency was on the left side; in 3 it was indifferently on either side; and in 2 it was on the affected side. In 13 out of 14 cases of exclusive affection of the left lung, the decumbency was on the right side. In the remaining case it was prone. In 5 cases in which both lungs were involved, the decubitus varied under the influence of causes which I was unable to appreciate.

Decumbency, females.—In 4 out of 13 cases of exclusive affection of the right lung, the decumbency was on the left side; in 8, on the affected side; and in 1 case, indifferently on either side. In 15 out of 17 cases of exclusive affection of left lung, decumbency was on

[a] Louis, Researches on Phthisis, Sydenham Edition, page 161.

right side. In 2 cases it was on the affected side. In 3 cases of disease of both lungs, the decubitus varied from day to day towards the close of life.

February 8, 1860.

Dr. Gregg, President, in the Chair.

Cirrhosis of the Liver; Dilatation and Hypertrophy of the Heart; Incipient Renal Disease.—Dr. Finn exhibited pathological specimens illustrative of the above affections, and communicated the particulars of the case to which they referred:—

Hannah C., of irregular and intemperate habits, was received into the North Infirmary on the 21st of October, 1859, labouring under general anasarca and incipient ascites, complicated with acute bronchitis and dyspnœa. She had been three times previously in hospital. On the former occasions of admission she suffered from bronchitis and derangement of the liver.

Pulse 90, feeble; the action of the heart was laboured; there was nothing abnormal in the character of the sounds; visible pulsation of the jugulars at either side was observed. The urine yielded a copious precipitate of albumen to the usual tests. This had not previously occurred. For about a month this case progressed rather favourably; after this period she was suddenly seized with phlegmonous erysipelas of the legs, ushered in by intense pain, violent headach, and irritability of stomach.

These symptoms recurred from time to time till the 22nd of January, when death took place, unconsciousness and stertorous breathing having supervened a few hours previously.

Autopsy.—A large amount of effusion in the pleuræ and in the pericardium; congestion and emphysema of both lungs. Hypertrophy and dilatation of the heart, more particularly of the right cavities; the valves did not present any structural change. Cirrhosis of liver in an extreme degree. Structural change to a very moderate extent had taken place in the kidneys.

February 22, 1860.

Dr. Gregg, President, in the Chair.

Cases of Phlebitis, with Observations. By Professor O'Connor. —There is scarcely any subject in medical science on which greater light has been thrown by the researches of modern pathologists than that of phlebitis. The advantages of these discoveries have passed beyond the point they were intended to elucidate, by awakening attention to the doctrines of the humoral pathology, which had passed into unmerited oblivion. Chemical analysis and the microscope have given positive proof of the humoral origin of many diseases discarded previously as mere conjecture.

The true nature of phlebitis was scarcely known to the world before the writings of John Hunter appeared. And even he had but

imperfect ideas on the subject, confined to the primary effects of inflammation on the diseased veins. The opinions of his pupil, Abernethy, were still more vague. According to him, the manner in which phlebitis destroyed life was by the extension of the inflammation to the lining membrane of the heart. As late as 1818, Mr. Travers speaks of the innocuous quality of pus when mixing with the blood; asserting that all the evil in such cases was produced by the diffuse inflammation of the veins. The collections of pus found in various parts of the body were supposed to be caused by a metastasis of the pus originally secreted in the diseased veins. The discoveries recently made, that pus globules are too large to pass through capillary vessels into the general circulation, rendered necessary another explanation of these purulent deposits, which was readily afforded by assuming that every pus globule, entering the liver, through the portal veins, or the lungs through the general circulation, becomes a centre of suppurative inflammation in these organs; and, accordingly, that superficial abscesses cannot appear in cases of phlebitis without the lungs being first in a state of suppuration. This opinion is put forward in the following words by Simon, in his Lectures on Pathology: "I have never seen scattered abscesses in the course of the aortic circulation, except where the lung itself was in a state of suppuration." A similar opinion, founded, I believe, more on theory than fact, is held by the majority of writers. The following cases will, I think, show that there are some exceptions to this general rule; it will be necessary subsequently to see how far these cases can be reconciled with the physiological facts above referred to:—

Mrs. M. was attended in her confinement by a physician in this city. The labour was natural, but some fever, with tenderness over the uterus, arose some days after. She had frequent rigors, with heavy perspirations. I was called to see her about three weeks after her confinement. The tenderness in the abdomen had entirely ceased, but the fever still continued, and abscesses presented in various parts of the body, along the legs and thighs, in the neighbourhood of the joints, and on the abdomen. I am quite sure that during four weeks that I attended her, I opened not less than twenty abscesses. They had all this character in common, that they formed rapidly, and healed as rapidly when opened. All the cases of phlebitic abscesses I observed had this peculiarity. The foregoing was, I am sure, a case of blood-poisoning from some obscure inflammation of the uterine veins; still, there never was the least trace of inflammation or suppuration in the lungs; neither cough, pain, dyspnœa, nor any of the stethoscopic phenomena indicative of such state. Indeed, her perfect recovery would almost preclude the idea of the existence of so formidable a disease.

Mary Murphy was admitted into the Mercy Hospital some weeks after her confinement, suffering from phlegmasia dolens, with the usual symptoms. After some days, the swelling in the leg subsided, but abscesses formed in rapid succession, which left no doubt of

their phlebitic origin. Hectic fever ensued, and the patient gradually sunk from exhaustion, but at no time was there discovered any suspicion of disease in the lungs, though carefully looked for.

About three months since I was called on to attend a young man who was said to be in fever. He had a quick pulse; heat of skin; great prostration, preceded by rigors; and I should have left the case, believing the diagnosis made before my arrival to be correct, had the patient not alluded to a slight hurt on his shin, which he stated he had got some days before. On looking at the seat of injury I saw an unwholesome ulcer discharging a small quantity of ichorous pus, and, proceeding from it towards the groin, a number of red lines. This showed me at once that the fever was only symptomatic of venous inflammation or purulent absorption from the wound. On the following day the thigh was extensively swollen, and most tender to the touch, resembling in all respects a case of phlegmasia dolens. He had, besides, severe pains through the abdomen, with retention of urine, which had to be drawn off for several days. Abscesses soon formed on the thigh, the leg, and the abdomen, on the opening of which the swelling of the thigh and the pain subsided. However, the fever continued, and in a few days the other leg and thigh became swollen, and went through nearly the same course. The constitutional symptoms were very severe, and at times little hope was entertained of his recovery, which, however, ultimately took place. In this case, too, we had proof of extensive venous inflammation, without the slightest trace of pulmonary disease. If, then, pus globules cannot pass through the lungs into the general circulation, how are we to account for the facts which I have brought forward? This may be done in two ways: first, that pus globules may be so broken down before reaching the lungs, that their nuclei may pass into the general circulation, and produce such a tendency to coagulation of the blood as must produce inflammation, and consequent suppuration; or fibrine, altered by the inflammatory process, but not converted into pus, may take the same course, and produce the same effects. From this we may come to the conclusion that there are other forms of blood-poisoning, the result of inflammation, besides pyemia. This conclusion affords an explanation of many anomalous cases of puerperal fever, which frequently end in death without suppuration being discovered in any part of the body. Might not this fever be the result of some foreign body, not pus, being absorbed by the uterine veins? Many cases of phlegmasia dolens would admit of a similar explanation, though some of them are manifestly the result of adhesive inflammation in the veins. In one such case, many months after recovery, I found the superficial veins of the abdomen completely obliterated, and converted into hard, cord-like substances. I may also instance hydrotic fever, which sometimes ends in manifest pyemia, and sometimes kills by the simple influence of irritative fever. I have some hesitation in adducing as similar instances the eruptive fever sometimes met after confinements, and called puerperal scarlatina. I cannot imagine

that, of all contagious diseases, scarlatina should be the only one met under these circumstances. Why not puerperal measles, small-pox, typhus, &c.? They are at least as contagious as the former; and one of them, small-pox, more likely to occur at the late period of life in which this disease occurs. The cases of this fatal disease which came under my notice were persons in whom scarlatina had occurred earlier in life, and we know how rarely a second attack of this disease is found in the same individual. I may also mention the great fatality of puerperal scarlatina, as distinguishing it from ordinary scarlatina, which is occasionally very mild. Without attempting to dogmatize on the subject, I would simply suggest for future observation the possibility that this disease may be only a rash symptomatic of some uterine affection. If such should be found correct, it would remove from physicians the painful apprehension that they sometimes are the cause of inflicting a contagious disease upon those whom they profess to cure.

March 15, 1860.

Dr. Gregg, President, in the Chair.

Malignant Deposits within the Eye-ball. By John Williams, M. D., Surgeon to the Cork Eye Infirmary.

The recognition of a disease is of paramount importance in treatment, and it is truly said that "diagnosis is more than half the cure." Hence, therefore, the man who searches after truth for its own sake will never be satisfied with a superficial examination of a case submitted to him for treatment, hoping that a stray missile, an arrow shot at a venture, may hit the mark; but will narrowly investigate every sign and symptom that present themselves to him, and, save in some few instances, he is thus directed to a definite plan of treatment.

Now, if this holds true in diseases generally, how important must it be in affections of the eye-ball, which count so many, and where remedies are so few. But in those cases of malignant deposit within the globe, now under consideration, which prove destructive not only to vision, but to the life of the patient, I fear we cannot as yet distinguish them in the early stages, when treatment may be likely to prove serviceable, from those scrofulous deposits within the globe which are followed by, at most, the loss of the organ.

Malignant and scrofulous deposit begin alike, both as to the time of life, generally speaking, and, as to the objective and subjective symptoms presented by each; attract the attention of the nurse, parent, or other attendant, alike; pursue the same course; present like stages in the progress of the disease; but terminate in a manner widely different in both cases; the former being followed by the death of the patient, the latter by the loss of the organ of vision merely.

Deposit within the globe, whether malignant or scrofulous, is generally a disease of early life; and when it occurs, the attention of the attendant, in most cases the mother, is first attracted by a brilliant reflection from the child's eye, which, she says, "sometimes shines like a cat's eye, or appears like fish kept in a dark place," and, after a little time, she notices what she considers "a yellow speck on the clear of the eye," and, perhaps, also discovers that the sight of the eye is much affected, it may be, lost. If brought at this period to the medical attendant, a yellow or buff-coloured mass, or small granulated masses of the same colour, over which small blood-vessels may be seen coursing, appear behind the pupil at the bottom of the vitreous chamber; the pupil may be a little larger than that of the other eye, but the globe otherwise appears healthy, the sclerotic presenting no red vessels on it. After a period longer or shorter according to circumstances, the *second stage* commences. In this stage the morbid mass fills the vitreous chamber, comes in contact with the lens, which now becomes clouded and opaque, and presses against the back of the iris, which is bulged forwards, and gets discoloured; up to this there is rarely pain complained of. And now, the *third* and *last stage* begins. The morbid deposit advances still forwards, obliterates the aqueous chamber, and presses against the back of the cornea, which at last gives way from ulceration; pointing occurs sometimes in the sclerotic, and intense pain attends the subsequent discharge. If the disease be malignant, a fungus protrudes, and is accompanied by all the train of distressing symptoms that follow cancerous disease, and the little patient succumbs. If the disease be scrofulous, after the discharge has continued for some time, the globe shrinks and becomes a hard nodule. In some scrofulous cases, when the disease has just reached the *third* stage, the globe collapses gradually, and ulceration does not occur; but I have seen a *malignant* case, as was proved by the microscopic examination, made after the eye-ball was removed, by Dr. Bader, Curator of the London Ophthalmic Hospital Museum, to reach the *third* stage, and yet no ulceration to occur, yielding and stretching of the coats of the eye-ball having taken place; so thinned was the cornea that it could be recognised with difficulty. The three cases I shall now bring before this Society, some of the members of which have had an opportunity of seeing the patients during life, are examples of malignant deposit within the eye-ball, and illustrative of the *three* stages common to this disease and to scrofulous deposit:—

Case I., *Illustrative of the First Stage.*—Denis Heartnett, aged 2 years and 2 months, was brought to the Eye Dispensary in the month of February, 1858. He resides at Sunday's Well, and is a fine, healthy-looking child, apparently in rude condition. His mother brought him to me "on account of a speck on the right eye," which, she stated, attracted the attention of one of the "nuns" at the "Mercy Hospital" a week before. She also stated that, since then, flashes of light streamed from the eye in the dark like a cat's

eye, or the phosphorescent appearance of fish. Examination revealed a golden-coloured mass deep in the globe, immediately behind the pupil, over which small blood-vessels were distinctly seen coursing. As the pupil was dilated and fixed, this mass could be seen without difficulty. The colour of the iris was changed, but the globe otherwise did not appear unhealthy; it was not enlarged, nor was it vascular.

I prescribed some simple treatment, stating to the mother my reason for not interfering further, and asked her to let me see the child soon again.

In a month after this date, she came to the Dispensary. The disease had made no appreciable advance in the interim, but the child complained of pain, and was much disturbed at night. At this stage of the disease the child was seen by the members of the Medical and Surgical Association at their meeting in the Institution. The globe was neither enlarged nor vascular, but was of stony hardness, and was the seat of very great pain. On the *sixth* day, after the meeting of the Medical Association, I again saw the child; and, to my surprise, in that short period a large fungous mass protruded from between the eyeball and floor of the orbit, pushing the globe upwards and inwards.

In a few days this tumour attained such a size as to push the eyeball completely beneath the cover of the upper lid, which had to be raised in order to bring the globe into view. The iris was now contracted to a narrow ring, but the deposit in the globe did not appear to have increased. I put the child on the citrate of iron and quinia, and nourishing diet.

May 10. The tumour is now as large as a duck egg, and is pointing inwards. The tarsal borders are kept two inches apart by the protrusion of the sarcomatous-looking mass; the globe is still concealed by the upper eyelid; the child has not lost much flesh, but beginning is to dislike food.

22nd. The child is now evidently losing ground; he is much wasted, and the cheeks show the flush of hectic; the lips are dry and parched, and the pulse quick. For some days past the little patient makes no complaint of pain.

The tumour has now attained an enormous size, being nearly as large as a goose egg. The eyeball is exposed, and the upper lid, which up to the present concealed it, is much thinned, and can be moved over the globe with facility, but the lower lid is quite adherent to the tumour, which keeps the tarsal borders at least two inches and a half apart, and hangs down over the malar bone, and also presses inwards on the nose, so that the right nostril is flattened. The tumour, which is soft and painless, does not bleed much; on its surface is a little dirtyish pus.

30th. The lower part of the tumour is now on a line with the nostril, which is almost completely closed by the pressure; it continued to enlarge, and it bled at intervals till June 3, when the little patient succumbed to the disease.

Case II., *Illustrative of the Second Stage of the Disease.*—John Buckley, aged 7, rather a healthy-looking child, was brought to me to the Eye Dispensary in the month of February, 1858, for what his mother conceived to be "a speck on the left eye." On examination, there appeared to be a buff-coloured deposit in the vitreous chamber, which it completely filled; the iris was bulged forwards, and was of a green colour; the pupil, which was blocked up by the deposit, was widely dilated and fixed; the cornea was perfectly transparent, and the globe was normal in size and appearance. The mother stated that, in the spring of 1856, just two years before I saw the child, she noticed "something shining or glassy in the eye, just as a fish appears in the dark." This reflection appeared occasionally, and, in three or four months after she noticed it, she closed the sound eye, and handed the child a half-penny, and as he did not take it, she made further examination, and then discovered that vision was lost in that eye. The child complained now of intense pain in the eye, and the mother stated that, two months before her visit, great pain with swelling of the eyelids took place, but, after some time, both symptoms subsided; lately, however, the pain set in with great violence. I ordered treatment with a view to allay the pain, but extirpation of the eyeball seemed to me to be the only treatment towards the saving of the child's life, for I regarded the disease as malignant.

In eight months after this visit, the child was again brought to me to extirpate the eyeball. The following appearances presented themselves: the globe was uniformly enlarged to the size of a hen's egg, being oval in figure; the cornea, which was very considerably stretched and thinned, could with difficulty be distinguished from the sclerotic; no ulceration had taken place, and both eylids were free in their movements, but the enlarged eyeball protruded a little from between them.

I recommended her to place the child in the North Infirmary, under Dr. Hobart's care, we having as yet no beds in the Eye Dispensary. She did so, and the eyeball was removed by him. I forwarded it to Dr. Bader, Curator of the London Ophthalmic Hospital Museum, who pronounced it to be "a perfect specimen of medullary carcinoma." The child was six weeks in hospital before the wound healed.

January 25, 1859. The child was brought to me again to-day. I find a hard cartilaginous mass in the orbit. I believe the disease to be returning.

Case III., *Illustrative of the Third Stage of the Disease.*—John Sullivan, aged 4 years, was brought to me from Kanturk, August 10, 1858. A large tumour protruded from the left orbit, and hung down on the cheek; it was the size of a large egg, and kept the eyelids at least two inches apart. A tumour, the size of a bean, was felt in the left temporal fossa; this was evidently formed by the expansion of the outer wall of the orbit. The mother stated that, five or six months before she came to me, she noticed a small

red lump at the inner corner of the eye, and that at this time the sight of the eye was good; soon after this she noticed something yellowish at the bottom of the eye, and from this time the tumour grew very fast.

The child's health was unaffected; he was fat and ruddy; appetite good; and never complained of pain in the eye or tumour. It continued to grow, and the child finally sank under the disease.

March 29, 1860.

Dr. Gregg, President, in the Chair.

Case of Spinal Meningitis, simulating Tetanus, with Observations. By Professor O'Connor.—Bridget M'Carthy, aged 17 years, of full, plethoric habit, was admitted to the Mercy Hospital on the evening of the 22nd of September, 1859. She stated that on the previous Sunday, the 19th, she got a severe wetting. On the 21st she got a violent pain in her back, which deprived her of sleep the entire night. On the following morning her symptoms assumed the character which they presented on admission. She had received no hurt or injury, but her first menstruation occurred on the 19th of the month, four days before she got the wetting to which she attributed her illness. When seen the following morning, her symptoms were as follows: permanent pain in the upper dorsal vertebræ, increased on percussion or slight pressure; paroxysmal pain in the same situation, and extending along the spine, darting through the extremities and the muscles of the face. These returned every three or four minutes, causing the jaws to be suddenly clenched; so suddenly that, if engaged in conversation, her tongue was severely bitten. With each paroxysm the chest and abdomen were tilted up so that she rested on her heels and head. This condition of opisthotonos, at first paroxysmal, soon became permanent, so that it was necessary to fill up the space under her back with pillows. There was a look of great misery and distress in her countenance, with an instinctive apprehension about the consequences of her illness. Her intellect was not in the least disturbed, nor was there any headach; her tongue was not loaded, but was fearfully bitten; the pulse was quick, 125 in the minute, hard and wiry; her bowels were confined; she had a desire for food if she could masticate or swallow without difficulty. Twenty ounces of blood were taken from the arm before an impression was made on her pulse; and she was ordered a strong infusion of senna with sulphate of magnesia and tincture of jalap. The entire mixture was taken without any effect, and a strong turpentine injection was administered, which brought away a quantity of dark-coloured fæces, very fetid. Towards evening she appeared somewhat relieved. She was ordered for the night five grains of Dover's powder, and two of calomel, every two hours, unless sleep should arise. She slept a little during the night, and in the morning the pa-

roxysms were found to be less severe, but more frequent; pain in the dorsal vertebræ very severe. Ordered twenty leeches to be applied between the scapulæ. Later in the day she had more power over the muscles of the jaw, but the rigidity of the muscles of the upper and lower extremities was more fixed, particularly the latter. She perspired copiously, and after each paroxysm appeared very much exhausted. She was ordered three grains of mercury with chalk every second hour, followed by an ounce of the following mixture: tincture of opium, 1½ drachm; liquor of tartrate of antimony, 6 drachms; syrup, 1 ounce; water, sufficient to make 8 ounces. Mercurial ointment to be rubbed into the groins and axillæ.

September 25. The patient had a good night; she slept from time to time, but was awoke frequently by the spasms. They occurred now only every fifteen minutes; pulse still quick, 144 in the minute, and weak; the rigidity of all the muscles rather increased; pieces of cork were placed between the teeth to prevent the jaws from closing entirely; swallows liquids freely, and craves strong food, as she complains of debility; was allowed fowl-broth and ale. The gums being slightly touched, the mercury with chalk to be given only every fourth hour. Ordered a castor-oil draught to free the bowels, and, this being ineffectual, a purgative injection.

26th. Paroxysms less frequent; says she feels herself much improved, and is sanguine about her recovery. Still, the rigidity of the muscles of the extremities is not diminished, but the sensation in them is less painful; says there is some feeling of numbness in them. The pulse as before, but a diarrhœa set in which required the tartar emetic to be diminished, and some chalk mixture to be administered, which checked this symptom.

27th. Spent a pretty good night; slept a great deal at intervals; paroxysms only twice in an hour; rigidity of muscles still continues.

28th. Feels weaker; asks for an increase of nutriment, which was allowed her; three grains of mercury with chalk were given at bed-time to keep up the effect of the mercury.

29th. Pulse 140; great perspiration; passed a quiet night, with scarcely one paroxysm; muscular rigidity still continues; sudamina all over her chest.

30th. Slept a litle up to twelve o'clock, when she was awoke from her sleep by a violent paroxysm, which ended in a convulsion, lasting about a quarter of an hour. When she recovered from this, she talked calmly to the nurse, and spoke cheerfully of her condition. However, the rigidity of all parts of the body was, if possible, greater than at any previous time. After a little time she got a fresh paroxysm, and died.

Port-mortem Examination.—The muscles of the extremities were stiff and rigid, but not much different from the ordinary effects of the rigor mortis. On opening into the spinal marrow, the cerebro-spinal fluid was found much increased, and turbid, the membranes

injected; and the spinal marrow, for an extent of several inches, swollen, and of a consistence not much thicker than cream. When the membrane was opened, it flowed out readily. The canal was only examined in its upper third, the part suspected to be the seat of disease.

I thought this case worthy of the attention of the Society, because similar cases are not of frequent occurrence, and because it may lead to the subject of idiopathic tetanus, the investigation of which is attended with no small difficulty. When the sentient extremity of a nerve is injured, we can readily understand how irritation may be conveyed to the central nervous masses, and retransmitted to the motor nerves, causing all the dreadful symptoms attending on a case of tetanus; but, where no such injury exists, the subject is much more difficult. It is probable that many supposed cases of tetanus are nothing more than inflammation of the spinal marrow, or of its membranes, as that just now related. In it all the symptoms of tetanus were present: the trismus, spasms of the spinal muscles, the rigidity of the limbs, and the distressing spasms of the diaphragm; and if less care had been taken in this investigation, it might be recorded as a case of tetanus, not dependent on injury. Many other cases, however, of supposed idiopathic tetanus, may be traced to reflex irritation, where no such cause is believed to exist, as in cases of trismus infantium dependent on injury of the umbilical nerve, and many other cases where nerves are pressed on by the products of inflammation, or by morbid growths. It still remains a question whether there is not something more in all these cases than mere transmitted irritation. It is not easy to believe that mere irritation of the nervous centres would produce a disease so invariably fatal as tetanus. The general character of all other diseases recognised as dependent on irritation of peripheral nerves is that though most distressing, they are in the end harmless. Hysterical affections, chorea, convulsions dependent on intestinal worms, may, with many others, be cited as examples. Our ignorance of the *modus operandi* of all nervous action leaves us in doubt whether we are able to recognise all the organic changes that may take place in nervous structure, as the result of disease. If no parmanent alterations were produced in the nervous centres, we should expect a more beneficial result from operations for the removal of the part of the body first injured in cases of traumatic tetanus. It is to be hoped that fresh discoveries in the physiology of the nervous system may elucidate this and many other difficulties in practical medicine.

Cases from Practice. By Robert Fitzmaurice, L. K. & Q. C. P. I.; L. R. C. S. I.; Physician to Tralee Dispensary, &c. &c.

Cases of Ophthalmia and Corneitis.—I give the following cases, in which a certain system of treatment proved successful.

Mrs. Sheehy, a farmer's wife, laboured under ophthalmia for two years, during most of which time she was, by her own account, useless, and a burthen to her family. She had been leeched, and had frequent washes applied without effect. When I saw her, the following symptoms presented themselves:—Face pale and perspiring; pulse quick and thready; loss of appetite; night-sweats. Could not look up without shading the eyes with the hand; and then could not open them as much as half. There was some lachrymation on examination, but no profuse flowing of tears, nor extreme intolerance of light; sight greatly impaired; some pain complained of, on looking at the light. The eyes, viewed at a distance, had a glassy appearance; and, when closely examined, the right eye presented a dusky, unequal vascularity; red vessels crossing the cornea, which was very cloudy; and in one part there was a tendency to formation of matter, the conjunctival coat being raised, with numerous red vessels running into this spot; the iris scarcely perceptible through the cloudy cornea.

The left presented almost the same appearance as the right. The woman was, in fact, nearly blind, and her health almost lost, owing to confinement and irritation. She came from a distant part of the country, and lodged close by me; so that I had an opportunity of seeing her night and morning. I tried almost everything recommended in such cases, tonics, alteratives, leeching, blistering, belladonna, astringent washes, and nitrate of silver; but found that the affection increased, until I adopted the following treatment: both eyes were covered by day with a green shade; and she was not allowed outside doors until the sun was on the wane, after mid-day. She was put on good diet and porter; and the following mixture given:—Decoction of bark, twelve ounces; iodide of potassium, a scruple: two tablespoonfuls to be taken three times daily. This mixture was continued for two months; and on repeating it at each time the hydriodate of potash was increased by ten grains. Vinum opii was dropped into both eyes night and morning. I found it necessary to be most particular about this point. Under this simple treatment she daily improved, and recovered completely in two months, without relapse.

In some time after I met an exactly similar case. Mrs. Reidy, a smith's wife presented symptoms almost identical with the above. She stated she laboured under the affection for over two years; applied to two medical men of repute, one an army surgeon; both of whom treated her by leeching, blistering, and mercury, without effect. Her health was almost gone; and she despaired of her sight ever being restored. I put her immediately under the treatment above described; and at the end of two months she was able

to go home, with her eyes quite clear; and no relapse has occurred for the last eight months, during which time she has been quite well.

Remarks.—The above case presents some features of interest. It differs from scrofulous ophthalmia in the following respects:—Scrofulous ophthalmia generally occurs in young persons. In it you have more intolerance of light, lachrymation, a greater tendency to ulceration of the cornea, and almost a certainty of relapse. But here is a case of chronic inflammation of the conjunctiva covering the sclerotic and cornea, threatening destruction of the latter; giving the sufferer the appearance of blindness, and causing extreme debility of the system; and yet there is no iritis, no ulceration of the cornea, no deposition between its layers, no granular lids, nor other deleterious effects of inflammation, so generally observed in such cases of long standing; and all severe symptoms, by the treatment stated, are, in this case, completely removed in two months, without relapse. It may be said this was a case of chronic inflammation, getting better one day, and worse another, and at last ending in the severe symptoms described; and tonics, with blistering, &c., and small doses of mercury would have cured it. But I confidently assert that (whatever may have been the origin of the affection, and whatever may have been the state of constitution that prevented cure, or disorganization in a case of such long standing), complete or partial blindness would have occurred under any other treatment but that above referred to.

There is a *case* frequently seen at dispensary: it generally occurs in adults and young persons. One eye is oftener attacked, but sometimes both. The eye presents at a distance a pinkish appearance; the patient suffers no pain nor intolerance of light; no lachrymation, can open the eye fully; and comes seeking medical aid for soreness and redness of the organ. If not attended to, the affection may end in severe ophthalmia, or ulceration of the cornea: it is always of recent occurrence. In this case a twenty-grain solution of nitrate of silver dropped once a day into the eye removes all appearance of inflammation after a few applications.

Case of Chest Affection.—Sergeant Young, Lincolnshire Militia, aged 45, suffered for some time from oppression, cough, and expectoration, the increase of which symptoms for three months before I saw him caused him to seek medical aid; and at the end of this time I found him as follows:—Face and frame much emaciated, and on the former a sort of tawny, hectic flush was observed; pulse from 110 to 120, more full than thready; cough; dyspnœa; frothy mucopurulent expectoration; could not speak without interruption from shortness of breath, which was permanent: wheezing, like that of asthma; was subject to severe attacks of cough, and paroxysms of dyspnœa; appetite bad; bowels regular. *Physical Signs.*—Dulness on percussion beneath the left sterno-clavicular articulation for about two square inches, not extending on the sternum; no dulness elsewhere; apparent cavernous respiration over the dull part, giving

the idea of a large cavity with thin walls; marked weakness of respiration all over the left lung; some sibilant râles behind; and loose crepitation at the bases of both lungs posteriorly; no abnormal sound in heart or arteries. The treatment consisted of sedatives, expectorants, cod-liver oil, blistering, &c.; but nothing proved of avail. The pulse became thready; and the symptoms increased to the night of his death, which was caused suddenly by hemorrhage in about six weeks after I saw him.

A careful post-mortem examination was made in the presence of Dr. Spring. The diagnosis lay between phthisis with cavity, and aneurism. The following were the post-mortem appearances:—Left lung much smaller than the right; a solid cartilaginous tumour, the size of a small orange, was found occupying the root of the left, through which the bronchial tube, of very small diameter, passed; and the tumour was, as it were, bored by it. Some clots of blood were found in this tube, as also in the tube of the right lung, which was nearly twice as large as that of the left. There was no ulceration of the tumour; and when cut into, it was quite white. The heart and large arteries were all healthy. The lungs showed only ordinary congestion posteriorly; and when cut into, a sort of dirty, brown, frothy liquid exuded. No tubercular or cancerous deposit.

Remarks.—Whether this case be one of cancer or cartilaginous tumour occupying the root of the lung, it will be seen that the diagnosis arrived at was incorrect; but this will not surprise when the symptoms and signs are considered. *History.*—Emaciation, dyspnœa, cough, muco-purulent expectoration, night-sweats, dulness on percussion at the upper part of the lung, and apparent cavernous respiration: indications of phthisis. Paroxysms of dyspnœa, marked weakness of respiration, dulness, and death by hemorrhage: evidences of aneurism. Yet with those marked symptoms and signs, close observation will show that neither of these diseases was likely to exist. In the diagnosis of disease everything must be taken into consideration; but it sometimes occurs in doubtful cases that the presence or absence of a single sign clears up all difficulty. Such a remark applies to a certain extent in this case, as also in other diseases of the chest: for instance, in cases involving dulness on percussion at the postero-inferior portion of the lungs; if dulness changes seat by change of posture, all doubt is removed as to the existence of fluid in the chest, though the symptoms may be common to other affections. Now, if this was a case of phthisical cavity, there should be either click, creak, or gargouillement, and, probably, crepitation in the upper part of the opposite lung. The dulness, it is likely, also would be tympanitic. But it may be said, Could it not be solidification from tubercle with tracheal respiration? The answer is, the constitutional symptoms indicated an advanced stage of phthisis. There was no bruit; no double sound over the tumour; no pulsation; and the symptoms there were of some other serious disease besides aneurism. The marked weakness of respiration all over the

left lung, showing pressure on the bronchial tube; the apparent cavernous respiration conveyed from the trachea by a solid tumour, with the symptoms, pointed to a serious constitutional disease, probably cancer, occupying the root of the lung.

The lesson to be taught by this case is the necessity of close observation and reflection before making a diagnosis on doubtful disease of the chest. The hemorrhage and muco-purulent expectoration must have proceeded from congestive irritation.

The respiration was apparently the most perfect cavernous respiration I ever heard, which, probably, was due to the thickness of the walls of the chest, and the direct transmission of sound through a solid tumour from the trachea. The dulness on percussion was not tympanitic.

On the Treatment of Prurigo. By DR. VON BÄRENSPRUNG.

THE author warns his readers against the employment of stimulating agents. Local anæsthetics, as, for example, chloroform, are also useless. On the contrary, cold baths, cold ablutions, and applications to the skin, procure relief and quiet; tepid baths, bran baths, and vapour baths, allay the increased excitement. Anointing the skin with mild fatty matters and inunctions with lard, are also suitable means of procuring alleviation of the patient's sufferings. The author enumerates the preparations of sulphur, tar, and sublimate, as specific remedies. Slight cases of prurigo are undoubtedly often cured by sulphur baths and sulphur ointments. In obstinate cases the author obtained remarkable effects from baths of sublimate. The patient takes every second day, or at longer intervals, a bath at 95° Fahrenheit, in which two drachms of sublimate are dissolved; in general six such baths are sufficient to effect a perfect cure. The absorption of the sublimate is in this case very trifling, and its action is mainly local. It is necessary to remark that the bathing-vessel should be constructed of wood, and not of zinc or copper, as, if these metals be employed, not only is the vessel itself destroyed by the decomposition, but the bath is rendered inefficacious.—*Vierteljahrschrift für die praktische Heilkunde*, 1860. Band lxv., *Analekten*, p. 65.

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